REVISION HISTORY AG3 CHASSIS

MODEL

KV-ES38M31
KV-ES38M61
KV-ES38M90
KV-ES38M91

PART NO.: 9-872-258-01

NO	DATE	DESCRIPTION OF REVISION

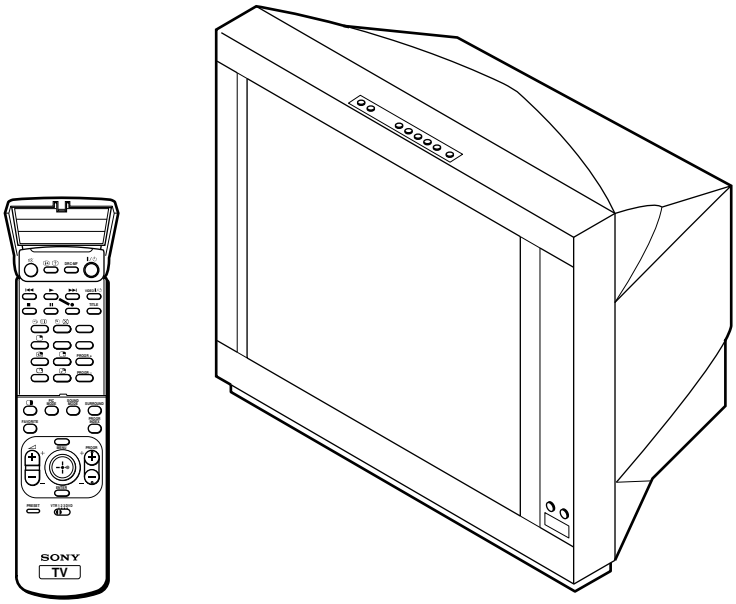
Self Diagnosis
Supported model

SERVICE MANUAL

AG3 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-ES38M31	RM-916	Australia	SCC-P72A-A
KV-ES38M61	RM-916	GE	SCC-P35B-A
KV-ES38M90	RM-916	Hong Kong	SCC-P27C-A
KV-ES38M91	RM-916	ME	SCC-P32F-A

MODEL	COMMANDER	DEST.	CHASSIS NO.



TRINITRON ® COLOR TV

SONY ®

SPECIFICATIONS

			Note
Power requirements	220-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G, I, D/K, M		
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58		
Stereo/Bilingual system	NICAM Stereo/Bilingual B/G, I, DK; A2 Stereo/Bilingual B/G		
Teletext language	English, Arabic, French		KV-ES38M90 only
Channel coverage			
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41		
	VHF: 0 to 12, 5A, 9A / UHF: 28 to 69 / CATV: S01 to S03, S1 to S41		Australia only
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41		
D/K	VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 CATV: S01 to S03, S1 to S41, Z1 to Z39		
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+4, W+6 to W+84		
(Antenna)	75-ohm external terminal		
Audio output (Speaker)	15W + 15W		
Number of terminal			
(Video)	Input: 4*	Output: 1	Phono jacks; 1 V_{P-P}, 75 ohms
♪ (Audio)	Input: 4*	Output: 1	Phono jacks; 500 mVrms
(S Video)	Input: 2		Y : 1 Vp-p, 75 ohms, unbalanced, sync negative C : 0.286 Vp-p, 75 ohms
(Component Video)	Input: 1		Phono jacks Y : 1 Vp-p, 75 ohms, sync negative C_B : 0.7 Vp-p, 75 ohms C_R : 0.7 Vp-p, 75 ohms Audio : 500 mVrms
DIGITAL IN	Input: 1		Phone jack; 0.5 Vp-p, 75 ohms
(Headphones)	Output: 1		Stereo minijack
Picture tube	38 inch		
Tube size (cm)	97		Measured diagonally
Screen size (cm)	91		Measured diagonally
Dimension (w/h/d, mm)	962 x 728 x 615		
Mass (kg)	112		

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER lamp will automatically begin to flash.
The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER lamp flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

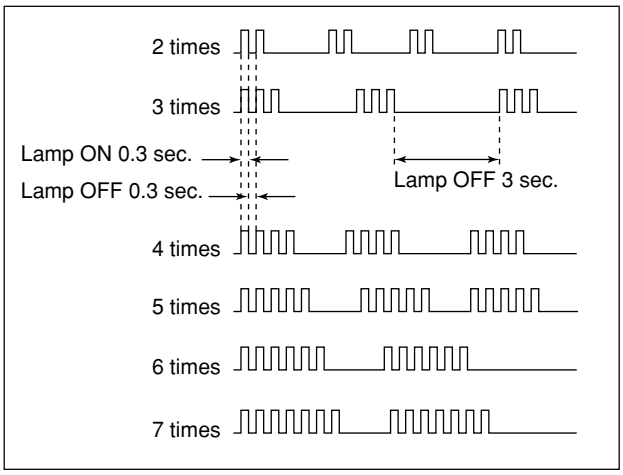
When an errors occurs, the STANDBY/TIMER lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.

Result for all of the following diagnostic items are displayed on screen. No error has occured if the screen displays a "0".

Diagnostic Item Description	No. of times STANDBY/TIMER lamp flashes	Self-diagnostic display/ Diagnostic result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	• Power cord is not plugged in. • Fuse is burned out F1601 (F1 Board)	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
• +B overcurrent (OCP)	2 times	002:000 or 002:001~255	• H.OUT Q6807 is shorted. • H.LIM Q6810 is shorted.	• Power does not come on. • Load on power line is shorted.
• +B overvoltage (OVP)	3 times	003:000 or 003:001~255	• PH 6602 faulty. • 10.5V is not supplied. (D board)	• Power does not come on.
• Vertical deflection failure	4 times	004:000 or 004:001~255	• V.OUT IC6800 faulty D6816 faulty D6817 faulty D6824 faulty R6852 open R6851 open	• Vertical deflection pulse is stopped. • Vertical size is too small. • Vertical deflection stopped.
• White balance failure (no PICTURE)	5 times	005:000 or 005:001~255	• G2 is improperly adjusted. (Note 2) • CRT problem. • Video OUT IC9001, 9002, 9003 are faulty. (C board) • IC8306 (J board) and IC4301 (E board) are faulty. • No connection E board to C board.	• No raster is generated. • CRT cathode current detection reference pulse output is small.
• Horizontal deflection failure	6 times	006:000 or 006:001~225	• C6831 is open circuit. • CN6101 (D1 board) is disconnected.	• H pulse output is too high.
• Audio Protection	7 times	007:000 or 007:001~225	• Power supply fails. • IC1203, IC1204 faulty	• There is picture but speaker does not release sound.
• Micro reset	—	101:00 or 101:001~225	• Discharge CRT (C Board) • Static discharge • External noise	• Power is shut down shortly, after this return back to normal. • Detect Micro latch up.

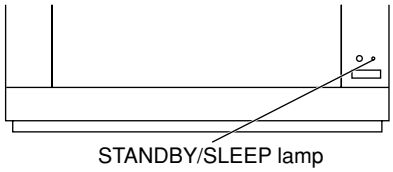
Note 1: Refer to screen (G2) Adjustment in section 4-5 of this manual.

2. DISPLAY OF STANDBY/TIMER LIGHT FLASH COUNT



Diagnostic Item	Flash Count*
+B overcurrent	2 times
+B overvoltage	3 times
V deflection stop	4 times
White balance failure	5 times
High voltage protector	6 times
Audio Protection	7 times

* One flash count is not used for self-diagnostic.



3. STOPPING THE STANDBY/TIMER FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER lamp from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurances of failure for confirmation on the screen:

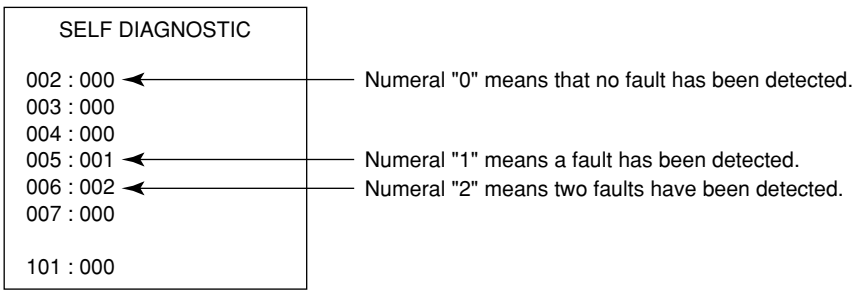
[To Bring Up Screen Test]
In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display ➡ channel 5 ➡ Sound volume - ➡ Power ON

⇧

Note that this differs from entering the service mode (mode volume +).

Self-Diagnosis screen display


SELF DIAGNOSTIC
002 : 000
003 : 000
004 : 000
005 : 001
006 : 002
007 : 000
101 : 000
Numeral "0" means that no fault has been detected.
Numeral "1" means a fault has been detected.
Numeral "2" means two faults have been detected.

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

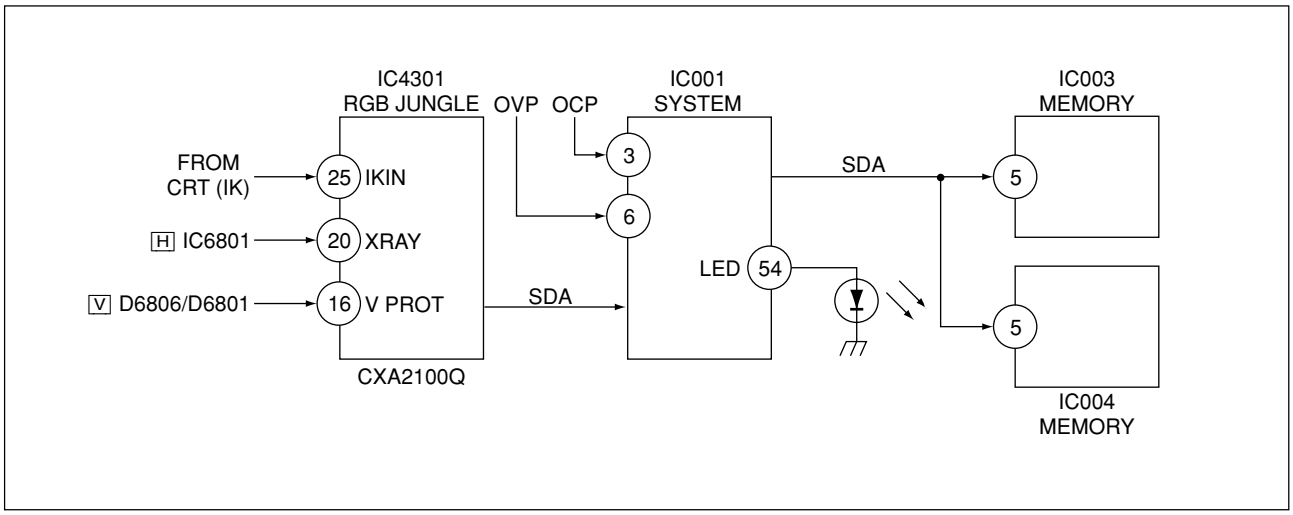
Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]
To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

Channel [8] ➡ 0

[Quitting Self-diagnostic screen]
To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT

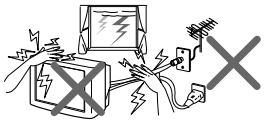


[+B overcurrent (OCP)]	Occurs when an overcurrent on the +B(135) line is detected by Q6610 and Q6609. If Q6610 and Q6609 go to ON, the voltage to the pin3 of IC001 go to UP. The unit will automatically turn off.
[+B overvoltage (OVP)]	Occurs when an overvoltage on the +B(135) line is detected by D6635, Q6611 and Q6612. If Q6611 and Q6612 go to ON, the voltage to pin6 of IC001 go to UP. The unit will automatically turn off.
[Vertical deflection failure]	Occurs when an absence of the vertical deflection pulse is detected by Q6811, Q6819, Q6820, Q6821 and D6801. Shut down the power supply.
[White balance failure]	If the RGB levels do not balance or become low level within 5 seconds. This error will be detected by IC4301. TV will stay on, but there will be no picture.
[High voltage protector of Horizontal Deflection]	Occurs when an overvoltage of horizontal pulse is detected by D6809 and IC6801. If the voltage of 7 pin of IC6801 goes to High, the voltage to pin20 of IC4301 go to UP. The unit will automatically turn off.

The operating instruction mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

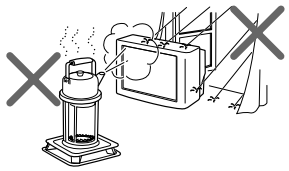
WARNING

- Dangerously high voltages are present inside the TV.
- TV operating voltage: 220-240 V AC.

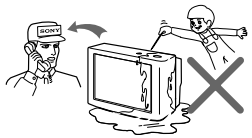


For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.

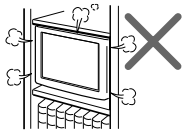
For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.



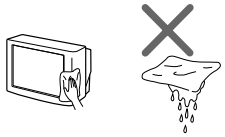
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



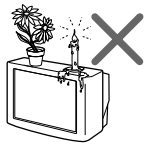
Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.



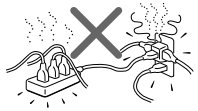
Do not block the ventilation openings of the TV. Do not install the TV in a confined space, such as a bookcase or built-in cabinet.



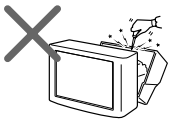
Clean the TV with a dry and soft cloth. Do not use benzine, thinner, or any other chemicals to clean the TV. Do not scratch the picture tube.



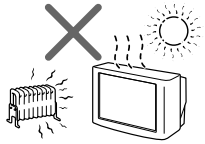
Do not place any objects on the TV.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



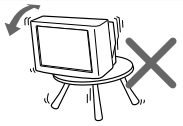
Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.



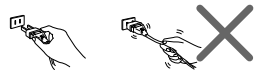
Your TV is recommended for home use only. Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.

SECTION 1
GENERAL

WARNING (continued)



Install the TV using the recommended TV stand (SU-ES38G) or its equivalent. Ensure that the TV stand and floor surface is stable and can support the TV set weight (112kg).



Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

Getting Started

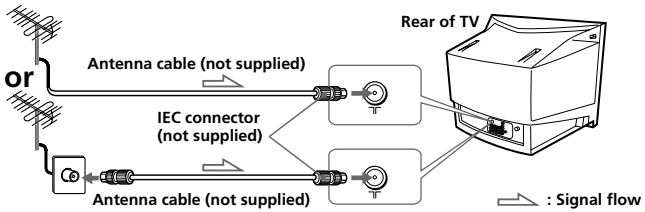
CAUTION

- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid that leaks from the batteries touches you, immediately wash it away with water.

Step 1

Connect the antenna

If you wish to connect a VCR, see the **Connecting a VCR** diagram below.

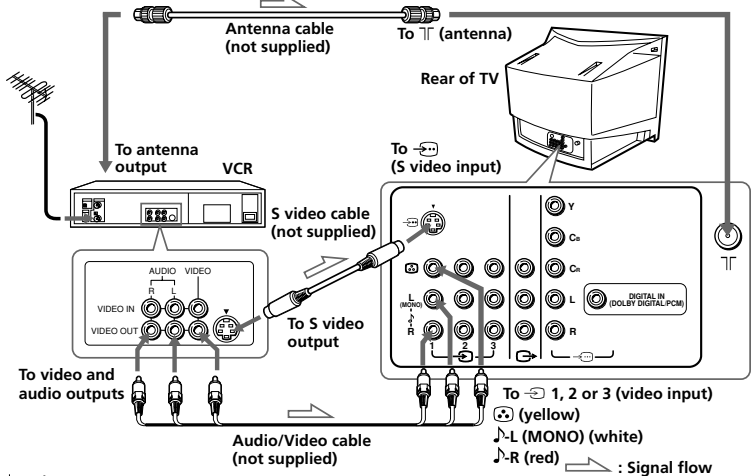


Note

- If the input signal to the ╥ (antenna) terminal is very weak, the picture may automatically become dimmed and "NO SIGNAL" will appear on the screen. This does not indicate a malfunction.

Connecting a VCR

To watch the video input, press ⮌ (see page 11).

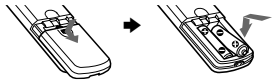


Notes

- If you connect a monaural VCR, connect the yellow plug to (the yellow jack) and the black plug to ♪-L (MONO) (the white jack).
- If you connect a VCR to the ╥ (antenna) terminal, preset the signal output from the VCR to the program number 0 on the TV.
- When both the ⮌ (S video input) and ⮌ 1 (video input) are connected, the ⮌ (S video input) is automatically selected. To view the video input to ⮌ 1 (video input), disconnect the S video cable.
- When no signal is input from the connected video equipment, the TV screen becomes blue.

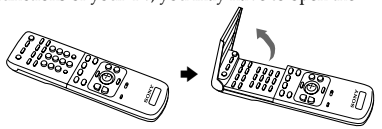
Step 2

Insert the batteries into the remote



Notes

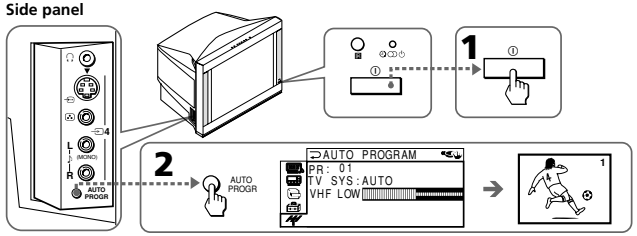
- Do not use old batteries or different types of batteries together.
- To operate some of the functions of your TV, you may have to open the remote control cover.



Step 3

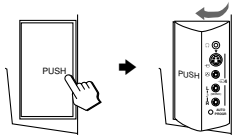
Preset the channels automatically

Side panel



Tips

- To stop the automatic channel presetting, press MENU twice.
- If your TV has preset an unwanted channel or cannot preset a particular channel, then preset your TV manually (see page 42).
- To open the side panel of your TV, push on it until you hear a click, then it will open.

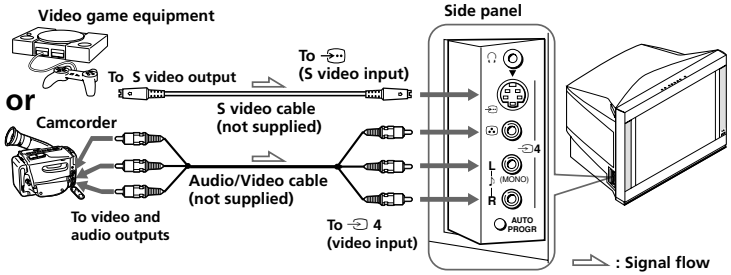


KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

Connecting optional components

You can connect optional audio/video components, such as a VCR, multi disc player, camcorder, video game, or stereo system. To watch and operate the connected equipment, see pages 11 and 26.

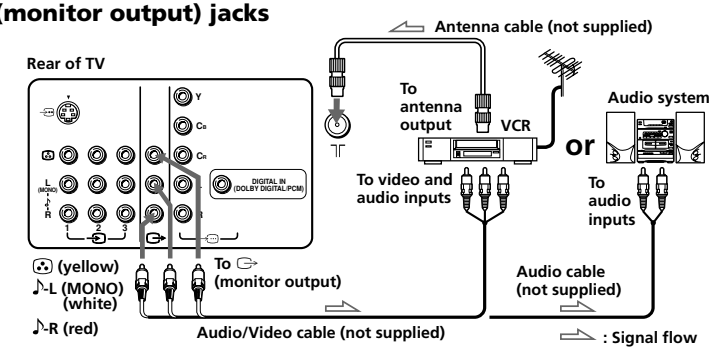
Connecting a camcorder/video game equipment using the (video input) jacks



Notes

- When connecting video game equipment, display the "FEATURE" menu and select "ON" for "GAME MODE" to adjust the picture setting that is suitable for video games (see page 37).
- You can also connect video equipment to the 1, 2, or 3 (video input) jacks at the rear of your TV.
- When both the (S video input) and 4 (video input) are connected, the (S video input) is automatically selected. To view the video input to 4 (video input), disconnect the S video cable.

Connecting audio/video equipment using the (monitor output) jacks

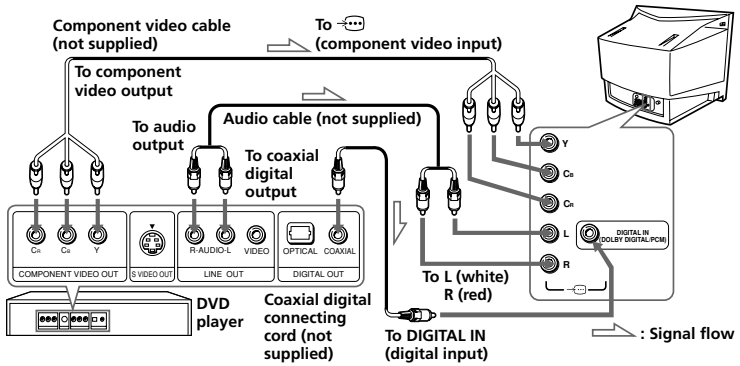


Note

- If you select "DVD" on your TV screen, no signal will be output at the (monitor output) jacks (see page 11).

Connecting a DVD player to (component video input)

1 Using an audio cable, connect R and L under (component video input) on your TV to the LINE OUT, AUDIO R and L output connectors on your DVD player.
2 Using a coaxial digital connecting cord, connect DIGITAL IN under (component video input) on your TV to the DIGITAL OUT, COAXIAL output connector on your DVD player.
3 Using a component video cable, connect Y, C_B, and C_R under (component video input) on your TV to the COMPONENT VIDEO OUT Y, C_B, and C_R output connectors on your DVD player.
4 Press on the remote or the TV until "DVD" appears on the screen.



Notes

- If your DVD player can output interlace and progressive mode signals, select the interlace output when connecting to (component video input) on your TV. Your TV can receive either 525i/60Hz or 625i/50Hz interlace signals.
- Some DVD player terminals may be labeled differently:

Connect	To (on the DVD player)
Y (green)	Y
C_B (blue)	C_b, B-Y or P_B
C_R (red)	C_r, R-Y or P_R

- When connecting to (component video input) on your TV, you must connect Y, C_B, and C_R to receive the video signals, and at least connect DIGITAL IN to receive digital audio signals or connect L and R to receive analog audio signals (see page 33).

continued

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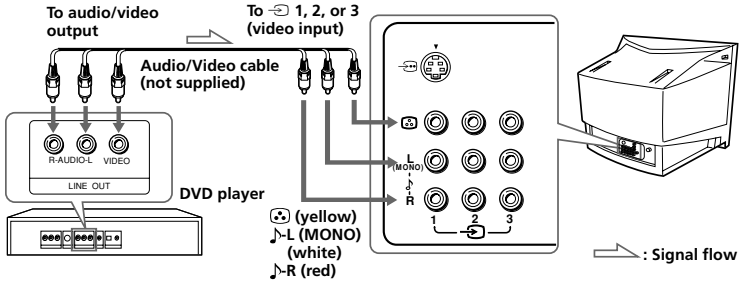
Connecting optional components (continued)

Note

- When making connections to DIGITAL IN under (component video input) on your TV, always set "DIGITAL IN: OFF" in the "A/V CONTROL" menu. After completing all connections, then set "DIGITAL IN: ON". If you set "DIGITAL IN: ON" while still making connections to DIGITAL IN (component video input), a loud noise may suddenly come out from the speakers, affecting your hearing and causing damage to the speakers (see page 33).

Connecting a DVD player to (video input)

Connect 1, 2, or 3 (video input) ♪/ (audio/video) connectors on your TV to LINE OUT on your DVD player.



Notes

- Since the high quality pictures on a DVD disc contain a lot of information, picture noise may appear. In this case, adjust the sharpness ("SHARP") under "PERSONAL ADJUST" in the "PICTURE MODE" menu (see page 32).
- Connect your DVD player directly to your TV. Connecting the DVD player through other video equipment will cause unwanted picture noise.

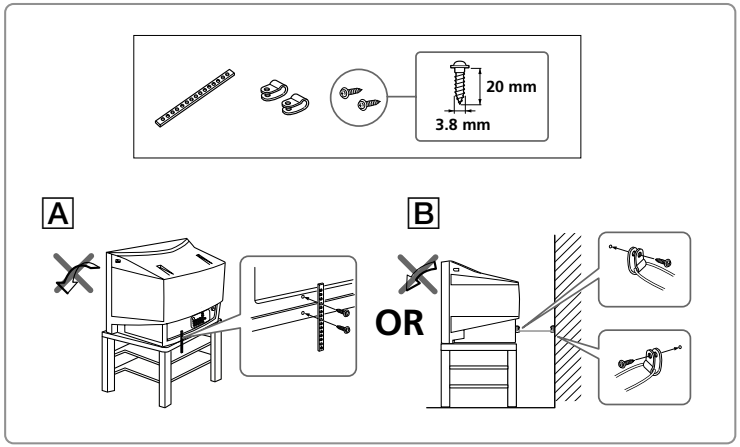
Securing the TV

To prevent the TV from falling, secure the TV using one of the following methods:

A With the supplied screws, attach the stabilizer band to the TV stand and to the rear of the TV using the provided hole.

OR

B Put the cord or chain through the clamps to secure the TV against a wall or pillar.

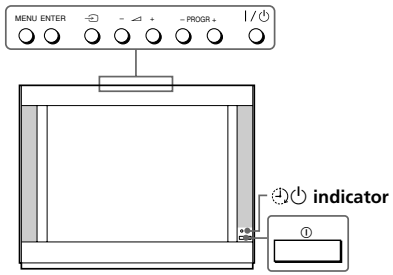


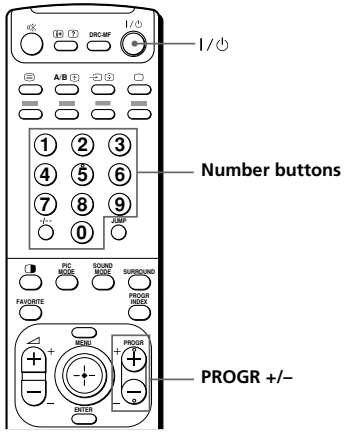
Note

- Use only the supplied screws. Use of other screws may damage the TV.

Watching the TV

This section explains various functions and operations used while watching the TV. Most operations can be done using the remote.



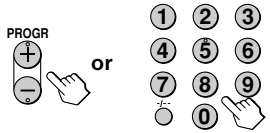


1 **Press ⏻ to turn on the TV.**

When the TV is in standby mode (the ⏻ indicator on the TV is lit red), press I/⏻ on the remote or on the TV.

2 **Press PROGR +/– or the number buttons to select the program number.**

For double digit numbers, press -/--, then the number (e.g., for 25, press -/--, then 2 and 5).



Note

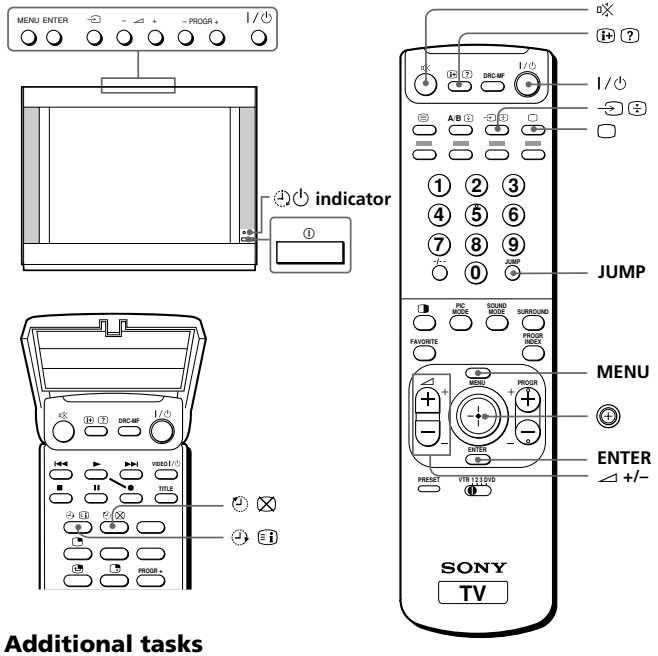
- When you turn on the TV, either the program number or video input is displayed for approximately 40 seconds. The ECO MODE (ECO) icon will also appear if "ECO MODE" in the "FEATURE" menu is set "ON" (see page 37).

To select a program number quickly

(1) Press and hold PROGR +/–.
(2) Release PROGR +/– when the desired program number appears.

Note

- When you select a program number quickly, the picture may be disrupted. This does not indicate a malfunction.



Additional tasks

To	Press
Turn off temporarily	I/⏻. The ⏻ indicator on the TV lights up red.
Turn off completely	⏻ on the TV.
Adjust the volume	+/–.
Mute the sound	.
Watch the video input (VCR, camcorder, etc.)	(or on the TV) to select "VIDEO 1", "VIDEO 2", "VIDEO 3", "VIDEO 4"or "DVD". To return to the TV screen, press (or on the TV).
Jump back to the previous program number	JUMP.
Display the on-screen information*	.

* Some picture/sound settings, and either the program number or video input are displayed. The on-screen display for the picture/sound settings disappears after about three seconds.

continued

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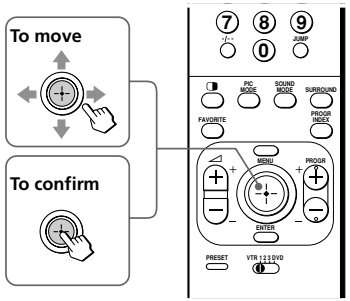
Using the Remote Control Button Joystick ( )

You can select the menu item on the screen by moving up, down, left or right (see page 30).

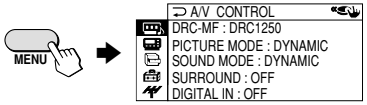
To confirm a selected item, press . You can also press ENTER on the remote to confirm a selected item.



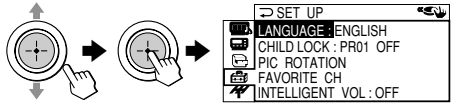
Changing the menu language

You can change the menu language as well as the on-screen language. For details on how to use the menu, see **Introducing the menu system** on page 28.

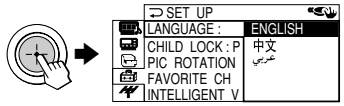
1 Press MENU.



2 Move up or down to select the "SETUP" icon ( ), then press .

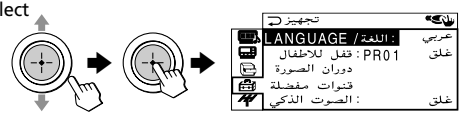


3 Make sure "LANGUAGE" is selected, then press .



4 Move up or down to select the desired language (e.g., "عربي"), then press .

The selected menu language appears.



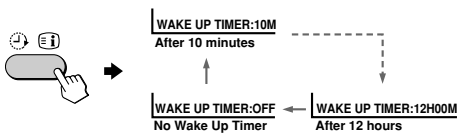
To return to the normal screen

Press MENU.

Setting the Wake Up timer

1 Press until the desired period of time appears.

The Wake Up timer starts immediately after you have set it.



2 Select the program number or video input you want to wake up to.

3 Press I/, or set the Sleep timer if you want the TV to turn off automatically.

The indicator on the TV lights up orange.

To cancel the Wake Up timer

Press until "WAKE UP TIMER: OFF" appears, or turn off the TV's main power.

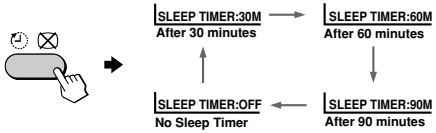
Note

- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into standby mode. To resume watching the TV, press any button or control on the TV or the remote.

Setting the Sleep timer

Press until the desired period of time appears.

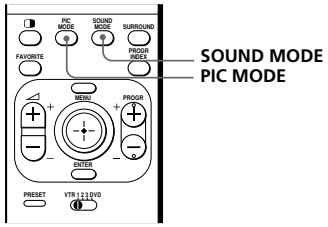
The Sleep timer starts immediately after you have set it.



To cancel the Sleep timer

Press until "SLEEP TIMER: OFF" appears, or turn the TV off.

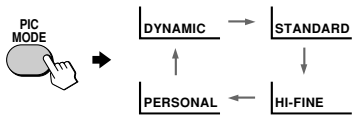
Selecting the picture and sound modes



You can select picture and sound modes and adjust the setting to your preference in the "PERSONAL" option.

Selecting the picture mode

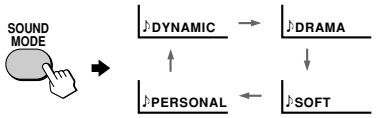
Press PIC MODE repeatedly until the desired picture mode is selected.



Select	To
"DYNAMIC"	view high contrast pictures.
"STANDARD"	view normal pictures.
"HI-FINE"	view higher density pictures with mild contrast.
"PERSONAL"	receive the last adjusted picture setting from the "ADJUST" option in the "A/V CONTROL" menu (see page 32).

Selecting the sound mode

Press SOUND MODE repeatedly until the desired sound mode is selected.



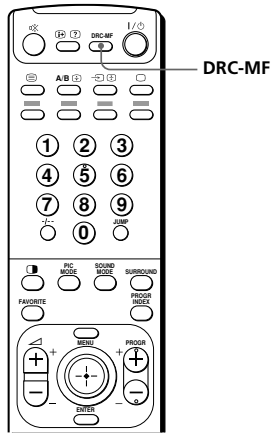
Select	To
"DYNAMIC"	listen to dynamic and clear sound that emphasizes both the low and high tones.
"DRAMA"	listen to sound that emphasizes voice and high tones.
"SOFT"	listen to soft sound.
"PERSONAL"	receive the last adjusted sound setting from the "ADJUST" option in the "A/V CONTROL" menu (see page 32).

Tip

- You can also set the picture and sound modes using the menu (see **Changing the "A/V CONTROL" setting** on page 31).

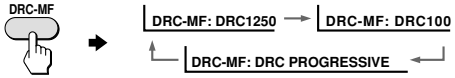
Viewing higher quality pictures

— "DRC-MF"



The Digital Reality Creation-Multi Function (DRC-MF) feature allows you to enjoy higher quality pictures on your TV. You can select "DRC1250" to view super real (higher density) pictures, "DRC100" to reduce flicker, or "DRC PROGRESSIVE" to reduce any jittering on the screen if necessary.

Press DRC-MF repeatedly until you receive the desired picture quality.



Select	To
"DRC1250"	view higher density pictures.
"DRC100"	reduce flicker on the screen.
"DRC PROGRESSIVE"	reduce jitter of any small areas or scanning lines (e.g., letters or the edge of objects) on the screen.

Tips

- You can also select the DRC-MF option using the menu (see **Changing the "A/V CONTROL" setting** on page 31).
- When the broadcast signal is weak, you may see some dots or noise on the TV screen. To reduce this interference, display the "A/V CONTROL" menu and select "ADJUST" in "PICTURE MODE", then adjust "SHARP" to reduce the sharpness (see page 32).

Note

- The DRC-MF mode is not selectable when using the "PROGRAM INDEX" or "FAVORITE CH" feature, or when the "GAME MODE", Picture-In-Picture ("PIP"), or "TWIN" mode is turned "ON".

The DRC-MF logo (DRC-MF Digital Reality Creation) and "DRC-MF" are trademarks of Sony Corporation.

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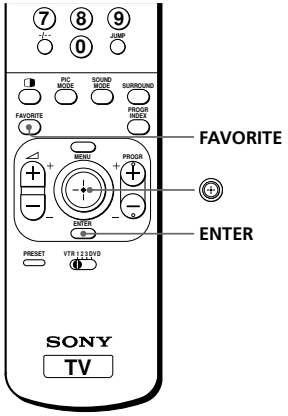
Viewing your favorite channels

— "FAVORITE CH"

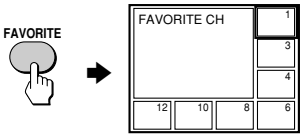
You can display seven favorite channels for quick and easy selection.

The last seven channels selected with the number buttons are displayed in "AUTO" mode. You can set up your own favorite channels in "MANUAL" mode under the "FAVORITE CH" menu (see **Programming the favorite channels setting** on page 40).

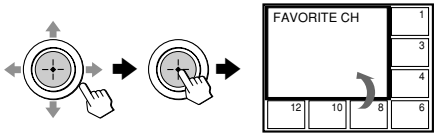


Selecting a favorite channel

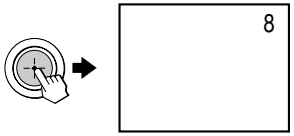
1 Press FAVORITE.



2 Move ⊕ up, down, left or right to select the desired channel (e.g. PR 8), then press ⊕.



3 Press ⊕ again.



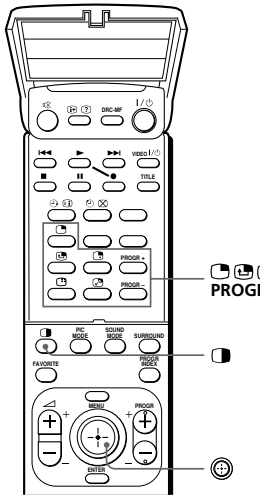
Note

- When you use your TV for the first time, seven preset channels appear.

Watching two programs at the same time

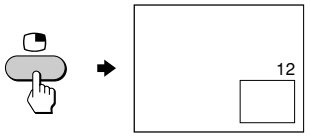
— "PIP", "TWIN"

With the Picture-in-Picture (PIP) or TWIN pictures features, you can display a different program number or video input within or beside the main picture.



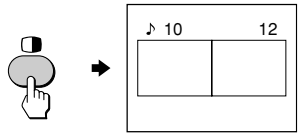
Displaying the PIP screen

Press ◔.



Displaying TWIN pictures

Press ◑.



To return to the normal screen

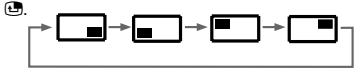
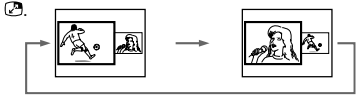
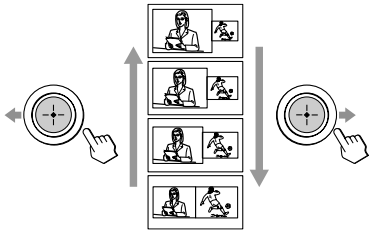
Press ◔ (when displaying the PIP screen) or ◑ (when displaying the TWIN picture screen).

Tip

- You can also display the PIP screen or TWIN pictures and operate some of its functions using the menu (see **Changing the "MULTI PICTURE" setting** on page 34).

continued

Additional PIP/TWIN pictures tasks

To	Press/Move
change the program number in the PIP screen or in the right TWIN picture	Press PROGR + or PROGR –.
select a video input in the PIP screen or in the right TWIN picture	Press .
swap pictures between the main and PIP screens	Press .
freeze the PIP screen	Press . To unfreeze the screen, press the button again.
change the position of the PIP screen	Press . 
swap the right and left pictures of the TWIN pictures	Press . 
change the screen size of the TWIN pictures	Move left to increase the left screen size. Move right to increase the right screen size. 

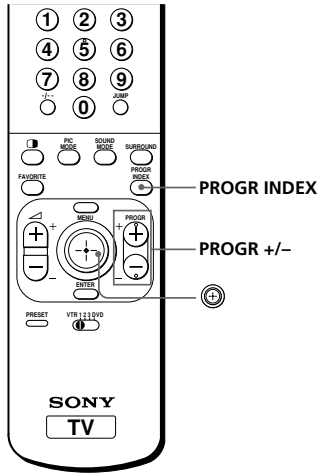
Notes

- The button does not function in the TWIN pictures mode.
- When you display a video input on the PIP screen at a faster/slower speed, the picture may be disrupted depending on the VCR type.
- If you display different color systems on the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be disrupted. This does not indicate a malfunction of the TV.
- In the TWIN picture screen, you can only operate and hear the sound of the main left screen (♪ appears on the screen).
- When the button is pressed, the TV screen flickers or goes blank for about one second before the TWIN pictures appear. This does not indicate a malfunction of the TV.

Displaying multiple programs

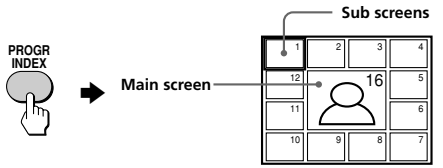
— "PROGRAM INDEX"

The PROGRAM INDEX feature displays all of the preset program numbers on twelve or seven sub screens for direct selection.

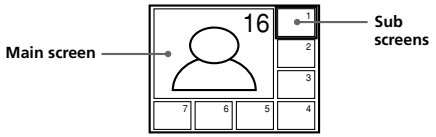


Press PROGR INDEX.

The first twelve preset program numbers appear one by one, clockwise from the upper left corner.



When the number of the preset program numbers is less than eight, the first seven preset program numbers appear one by one, clockwise from the upper right corner.



Tip

- When you press the PROGR INDEX button in the TWIN pictures mode, the left picture appears as the main screen of the PROGRAM INDEX mode.

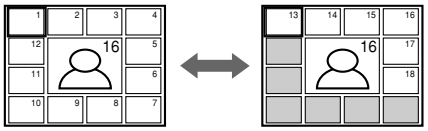
continued

Displaying multiple programs (continued)

To view the next or the previous twelve preset program numbers

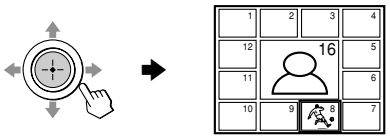
This works only when the number of the preset program numbers is more than twelve.

Press PROGR +/– on the remote or the TV.

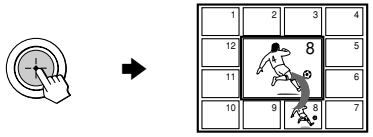


To select the desired program number directly from the sub screens

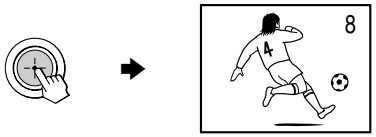
1 Move ⊕ up, down, left or right to move the frame to the screen of the program number you want to watch.



2 Press ⊕.



3 Press ⊕ again.



Tip

- Pressing the number buttons directly displays the program number.

To return to the normal screen

Press PROGR INDEX again, or:

1 Select “PROGRAM INDEX” from the “MULTI PICTURE” menu.
2 Press ⊕.

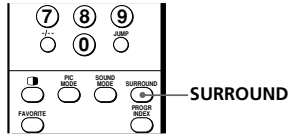
Tip

- You can also display multiple program numbers using the menu (see **Changing the “MULTI PICTURE” setting** on page 34).

Note

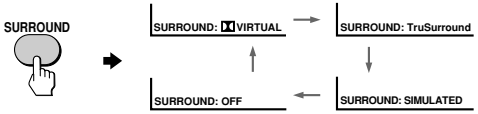
- When displaying multiple program numbers, only the sound of the main screen is heard.

Listening with surround sound



The surround feature enables you to enjoy the sound effects of a concert hall or movie theater.

Press SURROUND repeatedly until you receive the desired surround sound.



Select	To
“DD VIRTUAL”	listen to Dolby* Surround encoded sound.
“TruSurround”	listen to the surround sound that spreads out to the rear of a room.
“SIMULATED”	listen to monaural sound with a stereo-like effect.
“OFF”	turn off the surround sound.

Tip

- You can also select the surround option using the menu (see **Changing the “A/V CONTROL” setting** on page 31).

Notes

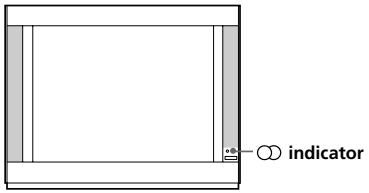
- The Virtual Dolby Surround of this model consists of Dolby Digital, Dolby Pro Logic and TruSurround.
- The “DD VIRTUAL” (Virtual Dolby Digital) is only available when receiving a Dolby Digital signal through the DIGITAL IN (component video input) jack at the rear of your TV and “DIGITAL IN: ON” in the “A/V CONTROL” menu is selected (see pages 7 and 31).
- When using the DIGITAL IN (component video input) jack at the rear of your TV, the available surround modes depend on the type of digital signal being received.
- “SIMULATED” uses SRS (MONO).

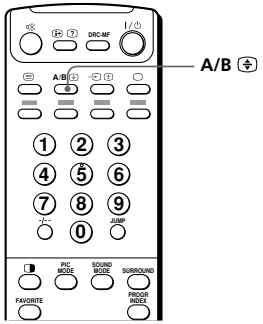
* Manufactured under license from Dolby Laboratories Licensing Corporation. “DOLBY”, the double-D symbol (DD) and “PRO LOGIC” are trademarks of Dolby Laboratories Licensing Corporation.

“TruSurround™” is a trademark of SRS Labs, Inc. SRS and the SRS symbol are registered trademarks of SRS Labs, Inc. in the United States and selected foreign countries. SRS and TruSurround are incorporated under license from SRS Labs, Inc. and are protected under United States Patent Nos.4,748,669 and 4,841,572 with numerous additional issued and pending foreign patents.

Enjoying stereo or bilingual programs

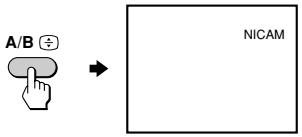
You can enjoy stereo sound or bilingual programs of NICAM and A2 stereo systems.





Press A/B repeatedly until you receive the sound you want.

The on-screen display changes to show the selected sound. The indicator on the TV lights up red when receiving any stereo or bilingual program.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO (Regular sound)

When receiving an A2 program

Broadcasting	On-screen display (Selected sound)
A2 stereo	MONO (Regular sound) → STEREO (Stereo sound)
A2 bilingual	MAIN (Main sound) → SUB (Sub sound)

Notes

- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy when receiving a NICAM program, select "MONO". The sound becomes monaural, but the noise is reduced.

If the sound is distorted when receiving a monaural program through the ⅂ (antenna) terminal

Press A/B repeatedly until "MONO" appears on the screen.

To cancel the monaural sound setting, press A/B again until "AUTO" appears on the screen.

MONO → AUTO

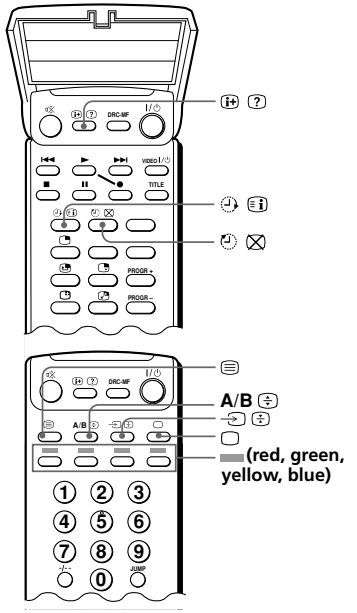
Notes

- The "MONO" or "AUTO" setting is memorized for each program position.
- You cannot receive a stereo broadcast signal when the TV is in the "MONO" setting. Normally, set the TV to "AUTO".

Viewing Teletext

(Except KV-ES38M90)

Some TV stations broadcast an information service called Teletext which allows you to receive various information, such as stock market reports and news.

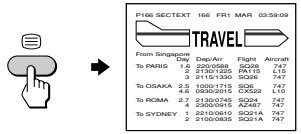


Displaying Teletext

1 Select a TV channel that carries the Teletext broadcast you want to watch.

2 Press ▤ to display the text.

A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, "100?" is displayed at the top left corner of the screen after approximately 10 seconds.



To turn off Teletext

Press ▢.

Additional Teletext tasks

To	Do this
display a Teletext page on the TV picture	Press ▤. Each time you press ▤, the screen changes as follows: Teletext → Teletext and TV → TV.
check the contents of a Teletext service	Press ⓘ. An overview of the Teletext contents, including page numbers, appears on the screen.
select a Teletext page	Press the number buttons to enter the three-digit page number of the desired Teletext page.* If you make a mistake, reenter the correct page number. To access the next or previous page, press PROGR +/–.
hold (pause) a Teletext display	Press ⊕ to display the symbol "⊕" at the top left corner of the screen. To resume normal Teletext viewing, press ⊕ or ▤.
reveal concealed information (e.g., an answer to a quiz)	Press ?. To conceal the information, press the button again.
enlarge the Teletext display	Press ⊕. Each time you press ⊕, the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.
stand by for a Teletext page while watching a TV program	1 Enter the Teletext page number that you want to refer to, then press ⊠. 2 When the page number is displayed, press ▤ to show the text.

* You can also select a Teletext page that appears in the colored columns at the bottom of the screen using the corresponding color-coded buttons on the remote.

Using FASTEXT

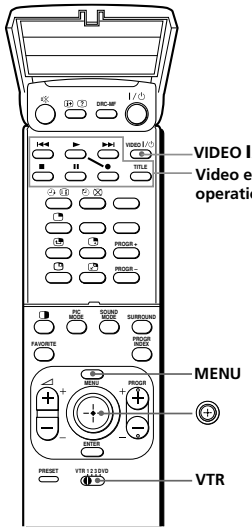
This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcast, colored menus appear at the bottom of the screen. The color of each menu corresponds to the color-coded buttons on the remote (red , green , yellow , and blue).

To access a FASTEXT menu

Press the color-coded button on the remote corresponding to the menu you want. The menu page appears on the screen after a few seconds.

Operating optional components

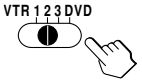
You can use the supplied remote to operate Sony video equipment such as Beta, 8 mm, VHS or DVD.



Setting up the remote to work with other connected equipment

Switch VTR to select the desired equipment type (see the chart below).

For example, to operate a Sony 8 mm VCR:



To control	Select
DVD	DVD
VTR1 (Beta)	1
VTR2 (8 mm)	2
VTR3 (VHS)	3

Notes

- If your video equipment is furnished with a COMMAND MODE selector, set this selector to the same position as the VTR switch.
- If the equipment does not have a certain function, the corresponding button on the remote will not operate.

Operating a VCR using the remote

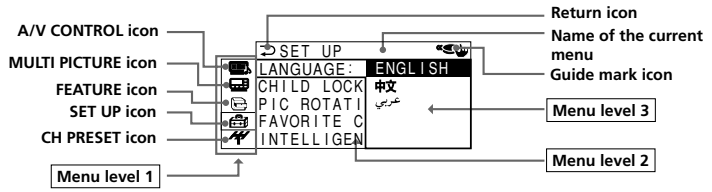
To	Press
turn on/off	VIDEO I/⏻
record	► while pressing ●.
play	►
stop	■
fast forward (▶▶)	▶▶I
rewind the tape (◀◀)	I◀◀
pause	❚❚ Press again to resume normal playback.
search the picture forward (▶▶) or backward (◀◀)	▶▶I or I◀◀ during playback. Release to resume normal playback.

Operating a DVD player using the remote

To	Press
turn on/off	VIDEO I/⏻
play	►
stop	■
pause	❚❚ Press again to resume normal playback.
step through different tracks of a disc	▶▶I to step forward or I◀◀ to step backward.
display the title menu	TITLE
display the menu	MENU while holding down ●.
select the menu item	Move ⊕ up, down, left or right while holding down ●.

Introducing the menu system

The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.

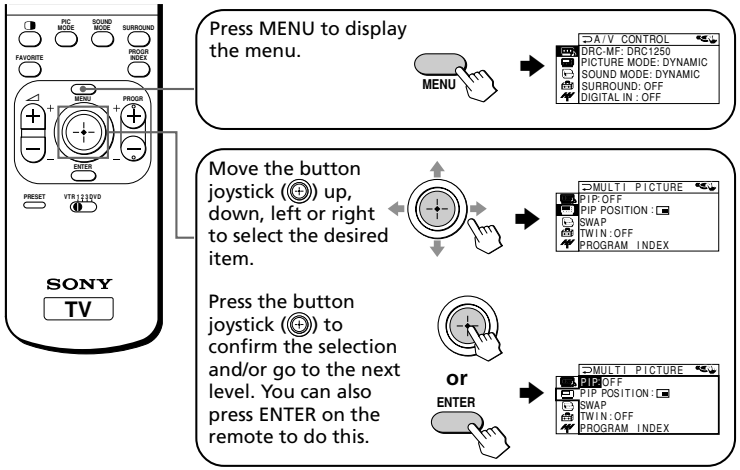


Level 1	Level 2	Level 3/Function
"A/V CONTROL"	"DRC-MF"	Select the "DRC-MF" mode: "DRC1250" → "DRC100" → "PROGRESSIVE"
	"PICTURE MODE"	Select the picture mode: "DYNAMIC" → "STANDARD" → "HI-FINE" → "PERSONAL" → "ADJUST"
	"ADJUST"	Adjust the "PERSONAL" option: "PICTURE" → "COLOR" → "BRIGHT" → "HUE" → "SHARP"
	"SOUND MODE"	Select the sound mode: "DYNAMIC" → "DRAMA" → "SOFT" → "PERSONAL" → "ADJUST"
	"ADJUST"	Adjust the "PERSONAL" option: "BASS" → "TREBLE" → "BALANCE" → "BBE"*
	"SURROUND"	Select the "SURROUND" mode: "□□ VIRTUAL" → "TruSurround" → "SIMULATED" → "OFF"
	"DIGITAL IN"	Activate or deactivate the digital audio input jack at the rear of your TV.
"MULTI PICTURE"	"PIP"	Display a PIP screen within the main picture.
	"PIP POSITION"	Change the position of the sub screen.
	"SWAP"	Swap the pictures between the main and sub screens.
	"TWIN"	Display a program number or video input beside the main screen.
	"PROGRAM INDEX"	Display all the preset program numbers at the same time.
"FEATURE"	"WIDE MODE"	Change the picture size.
	"ECO MODE"	Reduce power consumption of your TV.
	"GAME MODE"	Adjust the picture settings for video games.
"SET UP"	"LANGUAGE"	Change the menu language: "ENGLISH" → "中文" (Chinese) → "عربي" (Arabic)
	"CHILD LOCK"	Lock out specific channels.
	"PIC ROTATION"	Rotate the picture.
	"FAVORITE CH"	Set favorite channels.
	"INTELLIGENT VOL"	Adjust the volume automatically.
"CH PRESET"	"AUTO PROGRAM"	Preset channels automatically.
	"MANUAL PROGRAM"	Preset channels manually.
	"SKIP"	Skip unwanted or unused program numbers.
	"TV SYS"	Select the TV system: "B/G" → "I" → "D/K" → " M"
	"COL SYS"	Select the color system: "AUTO" → " PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"

* The BBE is manufactured by Sony Corporation under license from BBE Sound, Inc. It is covered by U.S. Patent No. 4,638,258 and No. 4,482,866. The word "BBE" and the BBE symbol are the trademarks of BBE Sound, Inc.

continued

How to use the menu



Other menu operations

To	Press/Move
Adjust the setting value	Move ⊕ up, down, left or right.
Move to the next/previous menu level	Move ⊕ left or right.
Cancel the menu	Press MENU.

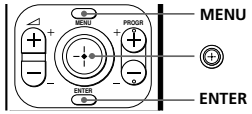
Tips

- If you want to exit from Menu level 2 to Menu level 1, move ⊕ up or down until the return icon (⮌) is highlighted, then press ⊕ or ENTER.
- The MENU, ENTER, and ◿ +/– buttons on the TV can also be used for the operations above.

Note

- If more than 60 seconds elapse between entries, the menu screen automatically disappears.

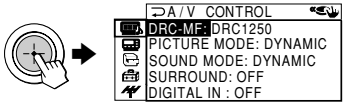
Changing the "A/V CONTROL" setting



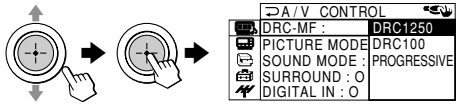
The "A/V CONTROL" menu allows you to adjust the picture and sound settings.

1 Press MENU.

2 Make sure the "A/V CONTROL" icon ( ) is selected, then press ⊕.



3 Move ⊕ up or down to select the desired item (e.g. "DRC-MF"), then press ⊕.



Select	To
"DRC-MF"	choose either "DRC1250", "DRC100" or "PROGRESSIVE".
"PICTURE MODE"	choose either "DYNAMIC", "STANDARD", "HI-FINE", "PERSONAL"*, or "ADJUST".
"SOUND MODE"	choose either "DYNAMIC", "DRAMA", "SOFT", "PERSONAL"*, or "ADJUST".
"SURROUND"	choose either "□□ VIRTUAL", "TruSurround", "SIMULATED", or "OFF".
"DIGITAL IN"	choose either "ON" or "OFF".

* When the "PERSONAL" mode is selected, you can receive the last adjusted picture or sound settings from the "ADJUST" option (see page 32).

Tip

- For details on the options under the "DRC-MF", "PICTURE MODE"/ "SOUND MODE", "SURROUND" and "DIGITAL IN" modes, see pages 15, 14, 21 and 33 respectively.

To return to the normal screen

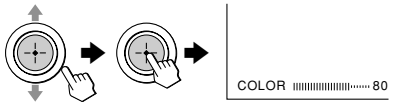
Press MENU.

continued

Changing the "A/V CONTROL" setting (continued)

Adjusting the "ADJUST" options under "PICTURE MODE"

1 Move ⊕ up or down to select the desired item (e.g., "COLOR"), then press ⊕.



2 Adjust the value according to the following table, then press ⊕.

For	Move ⊕ down or left to	Move ⊕ up or right to
"PICTURE"	decrease picture contrast	increase picture contrast
"COLOR"	decrease color intensity	increase color intensity
"BRIGHT"	darken the picture	brighten the picture
"HUE"*	increase red picture tones	increase green picture tones
"SHARP"	soften the picture	sharpen the picture

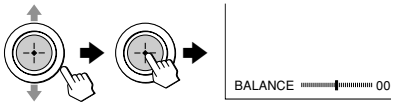
* You can adjust "HUE" for the NTSC color system only.

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select "PERSONAL".

Adjusting the "ADJUST" options under "SOUND MODE"

1 Move ⊕ up or down to select the desired item (e.g., "BALANCE"), then press ⊕.



2 Adjust the value according to the following table, then press ⊕.

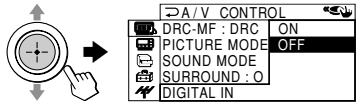
For	Move ⊕ down or left to	Move ⊕ up or right to
"BASS"	decrease the bass.	increase the bass.
"TREBLE"	decrease the treble.	increase the treble.
"BALANCE"	increase the left speaker's volume.	increase the right speaker's volume.
"BBE"	Move ⊕ up or down to: select "HIGH" for higher enhancement of sound clarity; select "LOW" for lower enhancement of sound clarity; select "OFF" to turn off the BBE sound.	

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select "PERSONAL".

Setting the "DIGITAL IN" options

1 In the "DIGITAL IN" menu, move ⊕ up or down to select the desired option (see table below).



Select	To
"ON"	receive digital audio signal through DIGITAL IN (component video input) jack.
"OFF"	receive analog audio signal through L and R (component video input) jack.

2 Press ⊕ to confirm the selected option.

Note

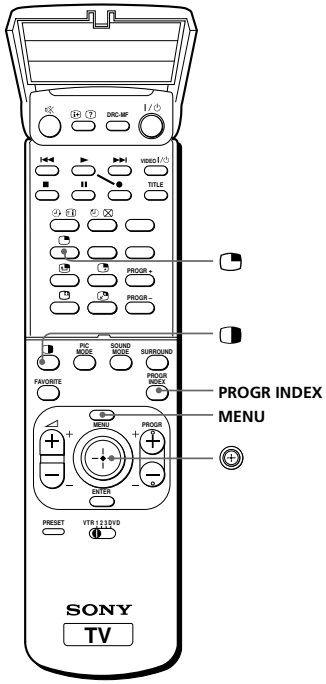
- Your TV can only receive Dolby Digital or Linear PCM format digital signals through the DIGITAL IN (component video input) jack (see page 7). Receiving any other format digital signal may cause unwanted noise or no sound from the speakers.

Tip

- For details on the menu system and how to use the menu, refer to **Introducing the menu system** on page 28.

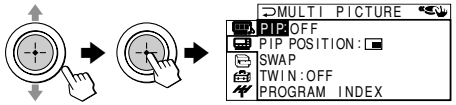
Changing the "MULTI PICTURE" setting

The "MULTI PICTURE" menu allows you to use the Picture-in-Picture (PIP), TWIN pictures, or PROGRAM INDEX features.

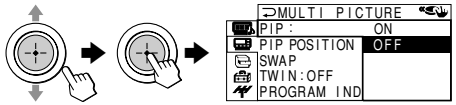


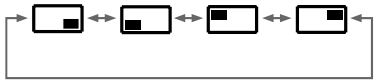
1 Press MENU.

2 Move ⊕ up or down to select the "MULTI PICTURE" icon (), then press ⊕.



3 Move ⊕ up or down to select the desired item (e.g., "PIP"), then press ⊕.



Select	To
"PIP"	display the PIP screen within the main picture. Move ⊕ up or down to select "ON", then press ⊕. To cancel, press ◔ or select "OFF", then press ⊕.
"PIP POSITION"	change the position of the PIP screen. Move ⊕ up or down to select the desired position, then press ⊕. 
"SWAP"	swap the main and PIP screens, or right and left pictures of the TWIN pictures.
"TWIN"	display a different TV program or video beside the main picture. Move ⊕ up or down to select "ON", then press ⊕. To cancel, press ◑ or select "OFF", then press ⊕.
"PROGRAM INDEX"	view multiple program numbers on the sub-screens. To cancel, press PROGR INDEX.

To return to the normal screen

Press MENU.

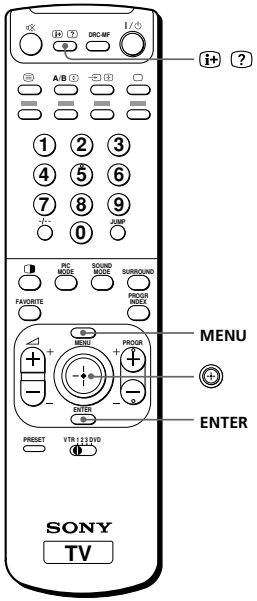
Tip

- For details on the menu system and how to use the menu, see **Introducing the menu system** on page 28.

KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

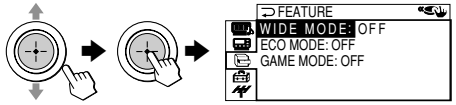
Changing the "FEATURE" setting

The "FEATURE" menu allows you to change the size of the picture on the screen when receiving wide mode (16:9) picture signals. You can also adjust the picture setting that is suitable for viewing video games, and reduce the power consumption of your TV.

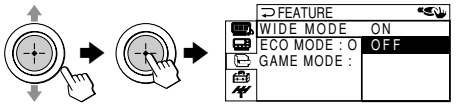


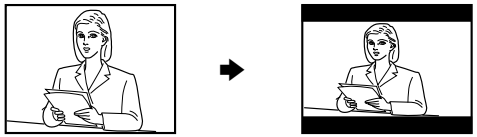
1 Press MENU.

2 Move ⊕ up or down to select the "FEATURE" icon ( ), then press ⊕.



3 Move ⊕ up or down to select the desired item (e.g., "WIDE MODE"), then press ⊕.



Select	To
"WIDE MODE"	change the size of the picture when receiving wide-mode (16:9) picture signal. Move ⊕ up or down to select "ON", then press ⊕.  To restore the normal picture size, select "OFF", then press ⊕.
"ECO MODE"	reduce power consumption of your TV to save energy. Move ⊕ up or down to select "ON", then press ⊕. To cancel, select "OFF", then press ⊕.
"GAME MODE"	adjust the picture setting that is suitable to view video games. Move ⊕ up or down to select "ON", then press ⊕. To cancel, select "OFF", then press ⊕.

Notes

- When you turn on "ECO MODE", the picture may become dimmer.
- "WIDE MODE" and "GAME MODE" is available only when receiving signals through the (video input), (S video input), or (component video input) jacks at the side and rear of your TV.
- If "ECO MODE" is on, the ECO MODE ( ) icon will appear at the bottom right corner of the screen when you turn on the TV or when you press on the remote (see pages 10 and 11).

To return to the normal screen

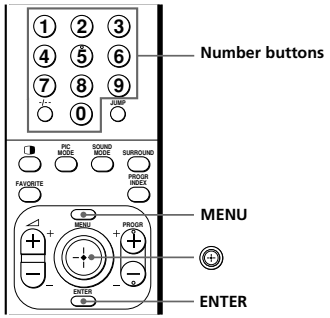
Press MENU.

Tip

- For details on the menu system and how to use the menu, see **Introducing the menu system** on page 28.

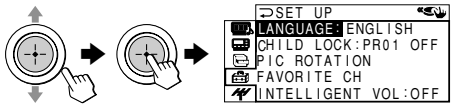
Changing the "SET UP" setting

The "SET UP" menu allows you to: change the menu language, block program numbers, adjust the picture position, program your favorite channels, and adjust the volume automatically.

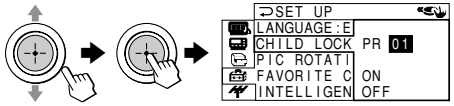


1 Press MENU.

2 Move ⊕ up or down to select the "SET UP" icon (), then press ⊕.



3 Move ⊕ up or down to select the desired item (e.g., "CHILD LOCK"), then press ⊕.



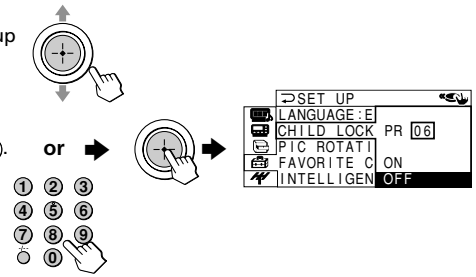
Select	To
"LANGUAGE"	change the menu language (see page 12).
"CHILD LOCK"	block program numbers (see page 39).
"PIC ROTATION"	adjust the picture position when it is not aligned with the TV screen. Move ⊕ up or right to adjust the position clockwise, then press ⊕. Move ⊕ down or left to adjust the position counterclockwise, then press ⊕.
"FAVORITE CH"	program your favorite channels (see page 40).
"INTELLIGENT VOL"	adjust the volume of all program numbers automatically. Move ⊕ up or down to select "ON", then press ⊕. To cancel, select "OFF", then press ⊕.

To return to the normal screen

Press MENU.

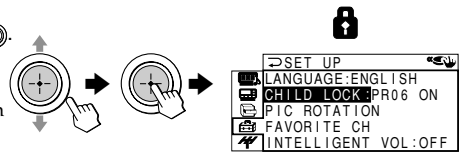
Blocking program numbers ("CHILD LOCK")

1 After selecting "CHILD LOCK", either move ⊕ up or down, or press the number buttons (or PROGR +/–) to select the desired program number (e.g. PR 06), then press ⊕.



2 Move ⊕ up or down to select "ON", then press ⊕. To cancel, select "OFF".

The lock symbol ( ) appears on the screen when "ON" is selected.



If a locked program number is selected, the lock symbol appears on the screen.

3 Repeat steps 1 and 2 to lock other program numbers.

To return to the normal screen

Press MENU.

Note

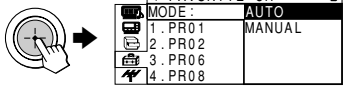
- If you preset a locked program number, that program number will be unlocked automatically (see page 41).

continued

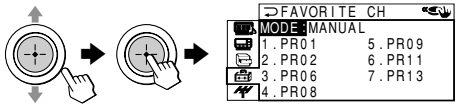
Changing the "SET UP" setting (continued)

Programming the favorite channels setting

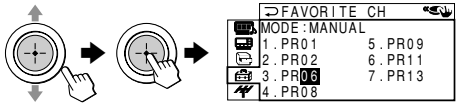
1 After selecting "FAVORITE CH", make sure "MODE" is selected, then press ⊕.



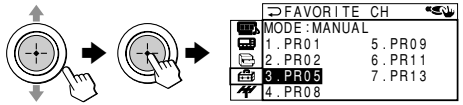
2 Move ⊕ up or down to select "MANUAL", then press ⊕.



3 Move ⊕ up or down to select the favorite channel you want to program, then press ⊕.



4 Move ⊕ up or down to change the program number, then press ⊕.



5 Repeat steps 3 and 4 to set other favorite channels.

To return to the normal screen

Press MENU.

Note

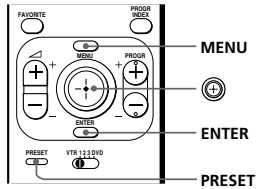
- If you press the PROGR +/– buttons or number buttons in step 4 above, the TV will display the program number immediately.

Tip

- To view the favorite channels that you have programmed, refer to **Viewing your favorite channels** on page 16.

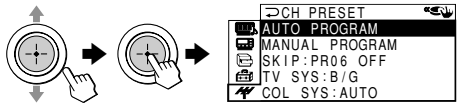
Changing the "CH PRESET" setting

The "CH PRESET" menu allows you to adjust the setup of your TV. For example, you can manually tune in a channel with a weak signal that fails to be tuned in by automatic presetting.

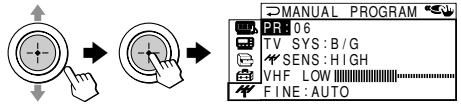


1 Press MENU.

2 Move ⊕ up or down to select the "CH PRESET" icon (), then press ⊕.



3 Move ⊕ up or down to select the desired item (e.g., "MANUAL PROGRAM"), then press ⊕.



Select	To
"AUTO PROGRAM"	preset channels automatically.
"MANUAL PROGRAM"	preset channels manually. See **Presetting channels manually** on page 42.
"SKIP"	skip unwanted or unused program numbers. 1 Either move ⊕ up or down, or press the number buttons (or PROGR +/–) until the unused or unwanted program number appears, then press ⊕. 2 Select "ON", then press ⊕. 3 To disable other program numbers, repeat steps 1 and 2. To cancel, select "OFF" in step 2.
"TV SYS"	select the TV system.
"COL SYS"	select the color system. Normally, set this to "AUTO".

To return to the normal screen

Press MENU.

Tip

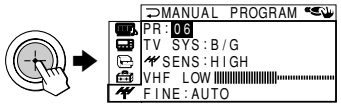
- For details on the menu system and how to use the menu, refer to **Introducing the menu system** on page 28.

continued

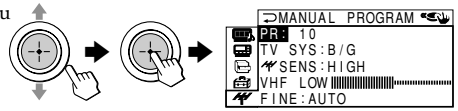
Presetting channels manually

1 After selecting "MANUAL PROGRAM", select the program number to which you want to preset a channel.

(1) Make sure "PR" is selected, then press ⊕.



(2) Move ⊕ up or down until the program number you want to preset (e.g., program number "10") appears on the menu, then press ⊕.

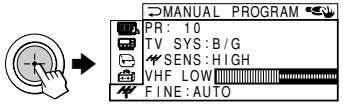


Tips

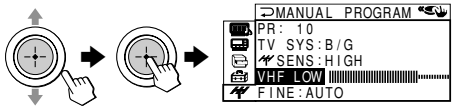
- You can also select the "MANUAL PROGRAM" menu directly by pressing the PRESET button on the remote.
- You can also select the program number with the PROGR +/– or number buttons.

2 Select the desired channel.

(1) Make sure either "VHF LOW", "VHF HIGH", or "UHF" is selected, then press ⊕.

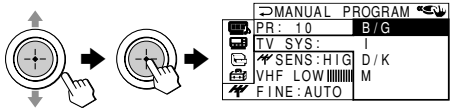


(2) Move ⊕ up or down until the desired channel's broadcast appears on the TV screen, then press ⊕.

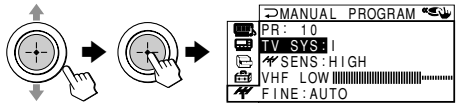


3 If the sound of the desired program number is abnormal, select the appropriate TV system.

(1) Move ⊕ up or down to select "TV SYS", then press ⊕.

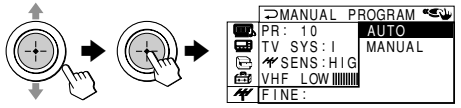


(2) Move ⊕ up or down until the sound becomes normal, then press ⊕.

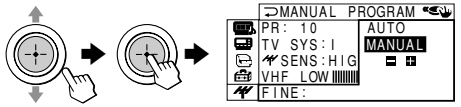


4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the "FINE" tuning feature.

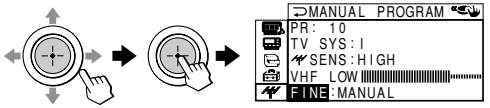
(1) Move ⊕ up or down to select "FINE", then press ⊕.



(2) Move ⊕ up or down to select "MANUAL", then press ⊕.

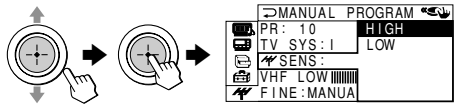


(3) Move ⊕ either up, down, left or right until the picture and sound quality are optimal, then press ⊕.
The + or – icon on the menu flashes while tuning.

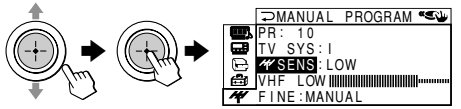


5 If the TV signal is too strong and the picture is distorted, you can adjust the TV reception sensitivity.

(1) Move ⊕ up or down to select "SENS", then press ⊕.



(2) Move ⊕ up or down to select "LOW", then press ⊕.



To return to the normal screen

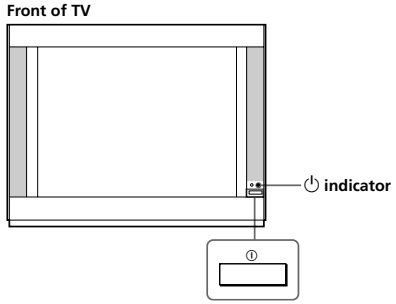
Press MENU.

Notes

- The TV system ("TV SYS") and the TV reception sensitivity ("SENS") settings are memorized for each program number.
- If you preset a locked program number, that program number will be unlocked automatically (see page 39).

Self-diagnosis function

Your TV is equipped with a self-diagnosis function. If there is a problem with your TV, the ⏻ (standby) indicator flashes red. The number of times the ⏻ indicator flashes indicates the possible causes.



1 Check that the ⏻ indicator flashes red several times between three-second intervals.

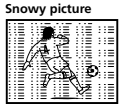
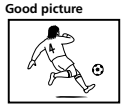
2 Count the number of times the ⏻ indicator flashes.

3 Press ⏻ (main power) to turn off your TV.

4 Inform your nearest Sony service center about the number of times the ⏻ indicator flashed.
Be sure to note the model name and serial number located on the rear of your TV.

Troubleshooting

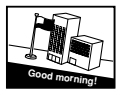
If you have any problem while viewing your TV, please check the following troubleshooting guide. If the problem persists, contact your Sony dealer.

Symptom	Possible cause	Solutions	Page
Snowy picture 	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and at the wall.	4
	• Channel presetting is inappropriate or incomplete.	• Press the PRESET button to display the "MANUAL PROGRAM" menu and preset the channel again.	42
Noisy sound	• The antenna type is inappropriate.	• Check the antenna type (VHF/UHF). Contact a Sony dealer for advice.	–
or	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
"NO SIGNAL" appears on the screen and the picture is dimmed.	• Signal transmission is low.	• Try using a booster.	–
Distorted picture	• Broadcast signals are too strong.	• Press the PRESET button to display the"MANUAL PROGRAM" menu. Then, select "SENS: LOW".	43
		• Turn off or disconnect the booster if it is in use.	–
Noisy sound			
Good picture 	• The TV system setting or channel presetting is inappropriate or incomplete.	• If the sound of all the channels are noisy, display the "CH PRESET" menu and select "AUTO PROGRAM" to preset the channels again.	41
		• If the sound of some channels are noisy, select the channel, then display the "CH PRESET" menu and select the appropriate TV system ("TV SYS").	42
Noisy sound	• The digital audio signal is inappropriate.	• Set "DIGITAL IN: OFF" in the "A/V CONTROL" menu and connect L and R (component video input) on your TV to receive analog audio signals.	7, 33

continued

Troubleshooting (continued)

Symptom	Possible cause	Solutions	Page
No picture **No sound** 	• The power cord, antenna or VCR is not connected.	• Check the power cord, antenna and the VCR connections.	4
	• The TV is not turned on.	• Press I/⏻ (power). • Press ① (main power) on the TV to turn off the TV for about five seconds, then turn it on again.	10 11
Good picture **No sound** 	• The volume level is too low.	• Press 🔊 + to increase the volume level.	11
	• The sound is muted.	• Press 🔇 to cancel the muting.	11
	• The digital audio signal is inappropriate.	• Set "DIGITAL IN: OFF" in the "A/V CONTROL" menu and connect ⊣▭ L and R (component video input) on your TV to receive analog audio signals.	7, 33
	• The "DIGITAL IN" setting in the "A/V CONTROL" menu is inappropriate.	• When connecting to ⊣▭ (component video input) on your TV, set "DIGITAL IN: ON" to receive digital audio signals through ⊣▭ DIGITAL IN, or set "DIGITAL IN: OFF" to receive analog audio signals through ⊣▭ L and R.	33
Dotted lines or stripes 	• There is local interference from cars, neon signs, hair dryers, power generators, etc.	• Do not use a hair dryer or other equipment near the TV. • Adjust the antenna direction for minimum interference. Contact a Sony dealer for advice.	– –
Double images or "ghosts" 	• Broadcast signals are reflected by nearby mountains or buildings.	• Use a highly directional antenna. • Use the fine tuning ("FINE") function.	– 43
	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
	• Use of a booster is inappropriate.	• Turn off or disconnect the booster if it is in use.	–

Symptom	Possible cause	Solutions	Page
No color 	• The color level setting is too low.	• Display the "A/V CONTROL" menu and select "ADJUST" of "PICTURE MODE", then adjust the "COLOR" level.	32
	• The color system setting is inappropriate.	• Display the "CH PRESET" menu and check the color system ("COL SYS") setting (usually set this to "AUTO").	41
	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
Abnormal color patches 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Locate external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press ① (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again.	–
TV cannot receive stereo broadcast signal.	• The stereo reception setting is inappropriate.	• Press A/B until "AUTO" appears on the screen.	22
Stereo broadcast sound switches on and off or is distorted. **or** **The sound switches between stereo and monaural frequently.**	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and on the wall.	4
	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
	• The broadcast signal has a transmission problem.	• Press A/B until a better sound is heard.	22
"100?" appears at the top of the screen after approximately 10 seconds and there is no Teletext display.	• The channel carries no Teletext broadcast.	—	24
Teletext display is incomplete (snowy picture or double images).	• Connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR, and at the wall.	4
	• The antenna direction is inappropriate.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
	• Signal transmission is too low.	• Try using a booster. • Use the fine tuning ("FINE") function.	– 43
Picture slant 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Keep external speakers or other electrical equipment away from the TV. • Display the "SET UP" menu and adjust "PIC ROTATION" until the picture position is optimal.	– 38

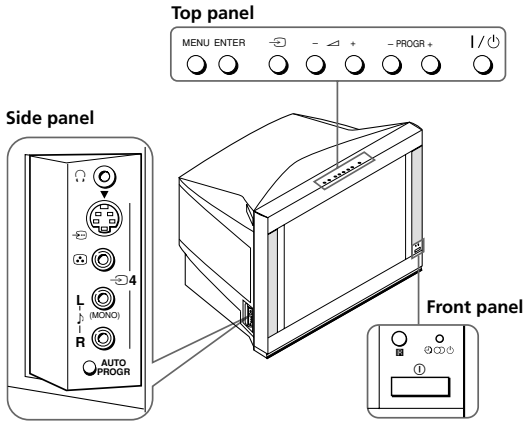
continued

Troubleshooting (continued)

Symptom	Possible cause	Solutions	Page
Lines moving across the TV screen.	• There is interference from external sources, e.g., heavy machineries, nearby broadcast station.	• Use the fine tuning ("FINE") function.	43
The ⏻ indicator on your TV flashes red several times between three-second intervals.	• Your TV may need servicing.	• Contact your nearest Sony service center.	44
Cannot play shooting games.	• Some shooting games which involve pointing a light beam at the TV screen with an electronic gun or rifle cannot be used with your TV. For detail, see the instruction manual supplied with the video game software.	—	–
TV cabinet creaks.	• Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction.	—	–
A small "boom" sound is heard when the TV is turned on.	• The TV's demagnetizing function is working. This does not indicate a malfunction.	—	–
Static discharge is felt when touching the TV cabinet.	• This is the same static discharge that is felt when touching metal door handles or car doors especially when the air is dry, for example in winter. This does not indicate a malfunction.	—	–

Overview of controls

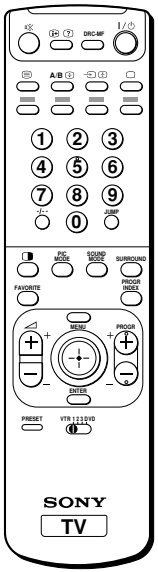
Front, top and side panels

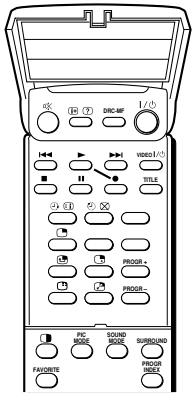


Button	Function	Page
Side panel		
🎧	Headphone jack.	–
AUTO PROGR	Preset channels automatically.	5
Front panel		
⏻	Turn off completely or turn on the TV.	10
⏻	Standby indicator.	10
🕒	Wake Up indicator.	13
◯◯	Stereo/bilingual indicator.	22
Top panel		
I/⏻	Turn off temporarily or turn on the TV.	10
PROGR +/–	Select program number.	10
◿ +/–	Adjust volume.	11
⏎	Select TV or video input.	11
ENTER	Confirm selected items.	30
MENU	Display the menu.	30

continued

Remote control

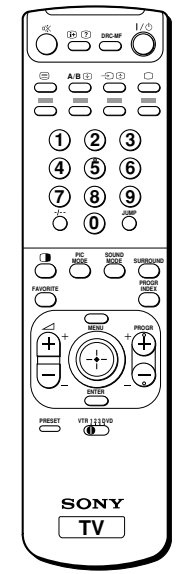


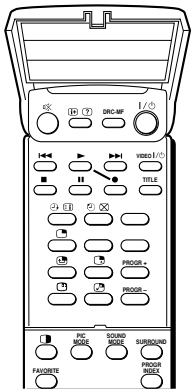


The names/symbols of buttons on the remote are indicated in different colors to represent the available functions.

Label color	Button function
White	For general TV operations
Green	For Teletext operations
Yellow	For PIP operations

Button	Function	Page
I / ⏻	Turn off temporarily or turn on the TV.	10
PROGR +/–	Select program number.	10
0 – 9, -/--	Input numbers.	10
ⓘ+	Display on-screen information.	11
🔇	Mute the sound.	11
▢	Display the TV program.	11
⇨	Select TV or video input.	11
◿ +/–	Adjust volume.	11
JUMP	Jump to previous program number.	11
Timer operations		
⏲	Set TV to turn on automatically.	13
⏲	Set TV to turn off automatically.	13
SOUND MODE	Select sound mode.	14
PIC MODE	Select picture mode.	14
DRC-MF	Select DRC-MF mode.	15
Favorite Channel operations		
FAVORITE	Display favorite channels.	16
◎	Select desired program number.	16
PIP and Twin picture operations		
◔	Display the PIP screen.	17
◨	Display TWIN pictures.	17
◎	Adjust Twin picture size.	18
PROGR +/ PROGR –	Change program in PIP/ Twin picture.	18
◔	Select video input for PIP/ Twin picture.	18
◔	Swap main and PIP/Twin picture.	18
◔	Freeze PIP screen.	18
◔	Adjust position of PIP screen.	18



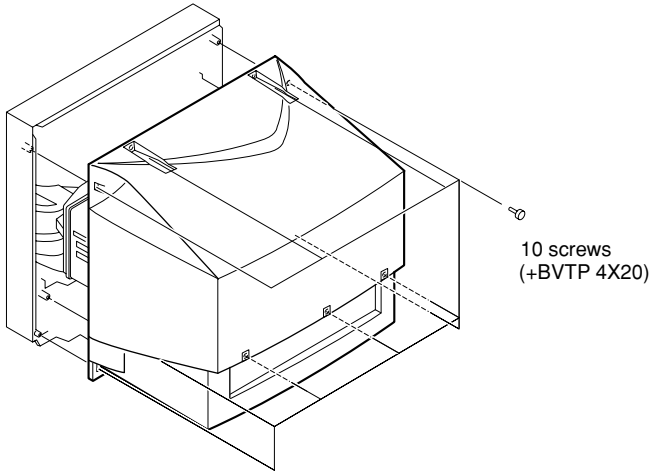


Button	Function	Page
Program Index operations		
PROGR INDEX	Display all preset program numbers.	19
PROGR +/–	View next/previous 12 program numbers.	20
◎	Select desired program number.	20
SURROUND	Select surround mode.	21
Stereo/bilingual operations		
A/B	Select stereo/bilingual mode.	22
Teletext operations		
☰	Display Teletext broadcast.	24
☰i	Display Teletext service contents.	25
⇳	Stop Teletext page from scrolling.	25
?	Reveal concealed information.	25
⇕	Enlarge the Teletext display.	25
⊠	Show TV screen while waiting for Teletext page.	25
0 - 9	Input Teletext page number.	25
PROGR +/–	Display the next or previous page.	25
▬ (red, green, yellow, blue)	Access a FASTEXT menu.	25
Optional components operations		
VTR	Set up the remote.	26
VIDEO I / ⏻	Power.	27
TITLE	Display the title menu.	27
►	Play.	27
►►I	Fast forward/Search forward.	27
I◄◄	Rewind/Search backward.	27
●	Record.	27
■	Stop.	27
II	Pause.	27
Menu operations		
MENU	Display the menu.	30
◎	Select, adjust and confirm selected items.	30
ENTER	Confirm selected items.	30
PRESET	Display “MANUAL PROGRAM” menu.	42

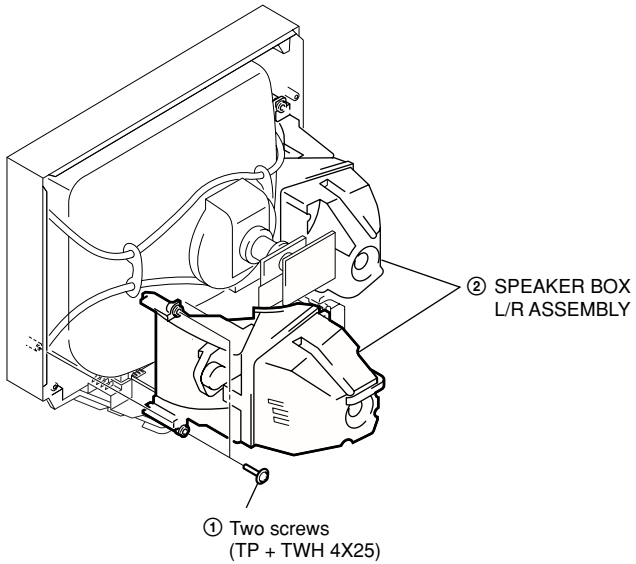
MEMO

SECTION 2
DISASSEMBLY

2-1. REAR COVER REMOVAL

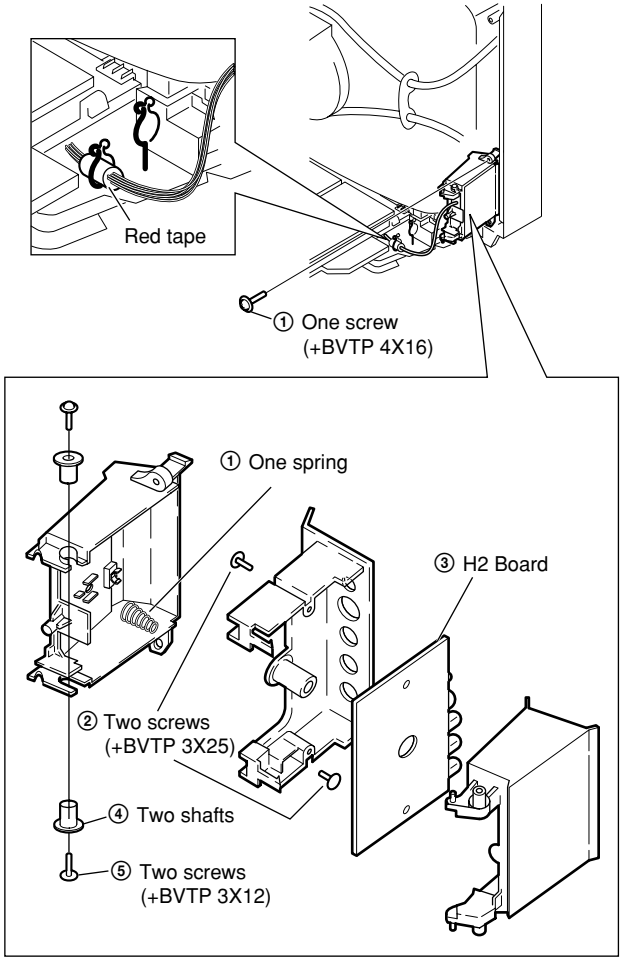


2-2. SPEAKER BOX REMOVAL

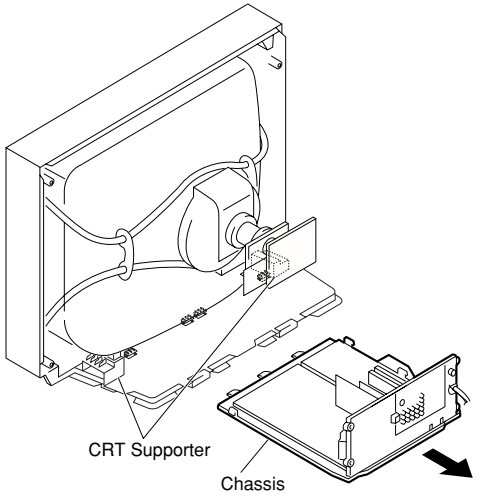


2-3. H2 BOARD REMOVAL

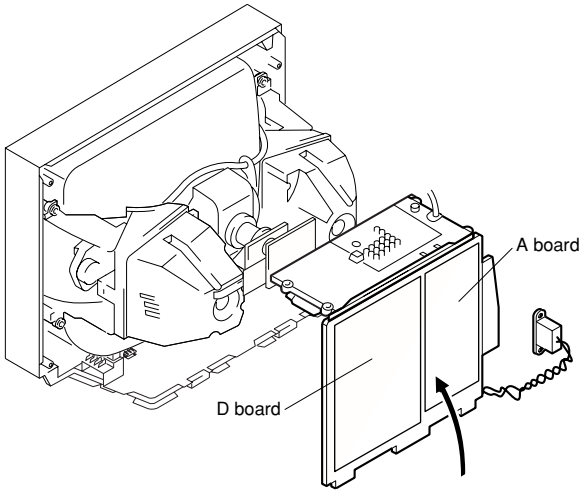
Caution: Please make sure that the red colour taped point is just placed with the purse lock when treating the leads to H2 board. If lead treatment is wrongly arranged, it will affect the door opening and closing malfunction.



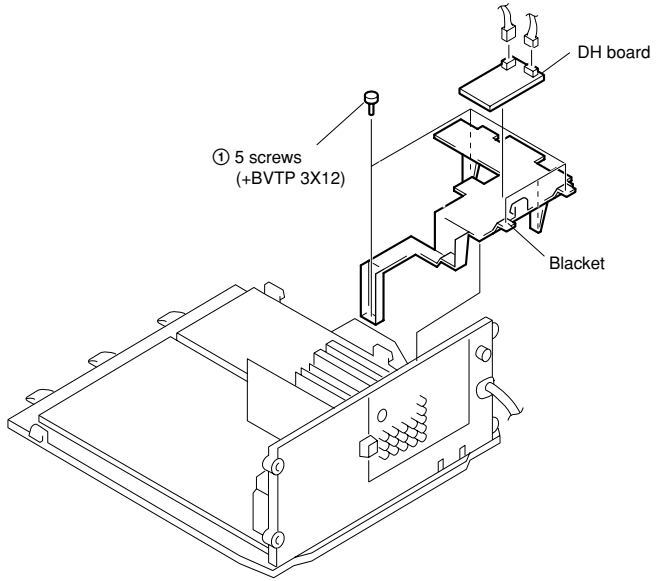
2-4. CHASSIS ASSY REMOVAL



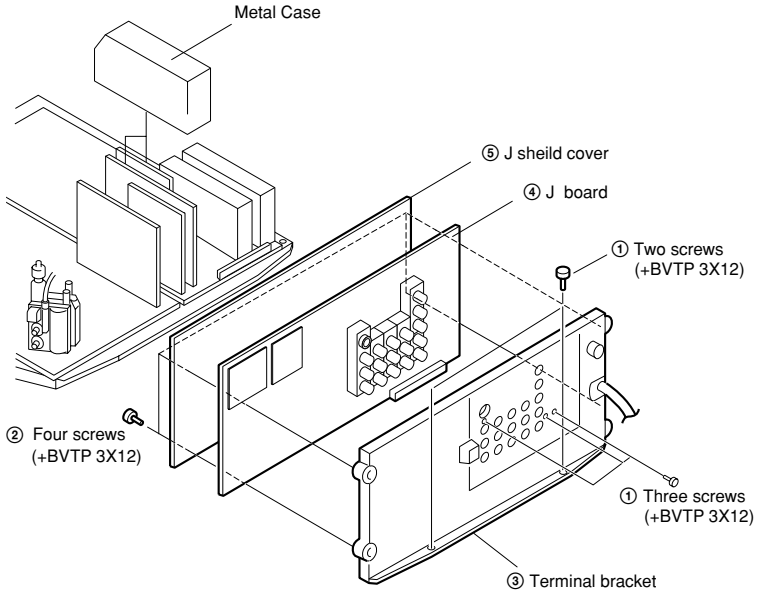
2-5. SERVICE POSITION



2-6. DH BOARD REMOVAL

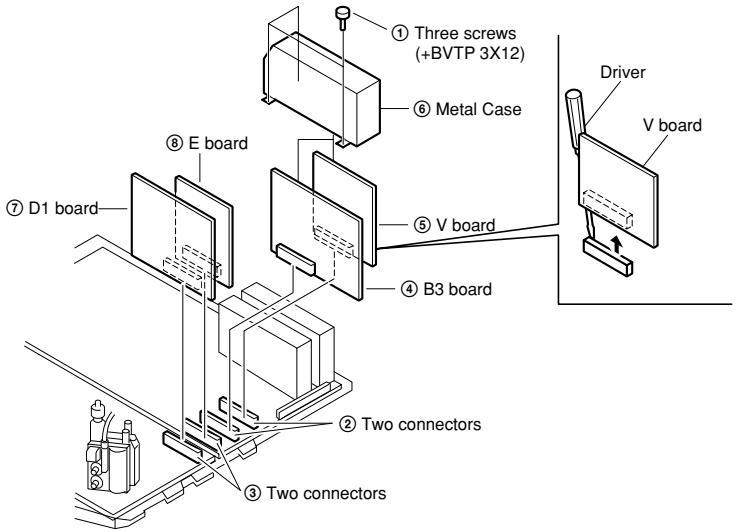


2-7. J BOARD REMOVAL

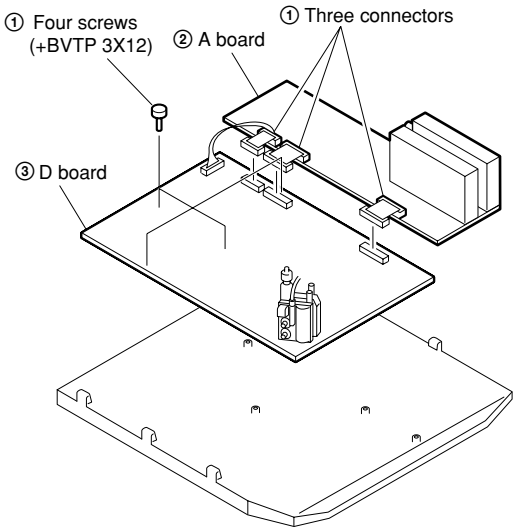


2-8. B3, D1 AND E BOARDS REMOVAL

NOTE : V Board is not used for KV-ES38M90.

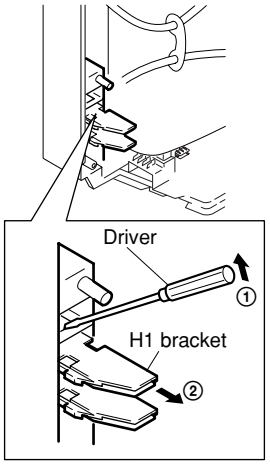


2-9. A AND D BOARDS REMOVAL



2-10. H1 BOARD REMOVAL

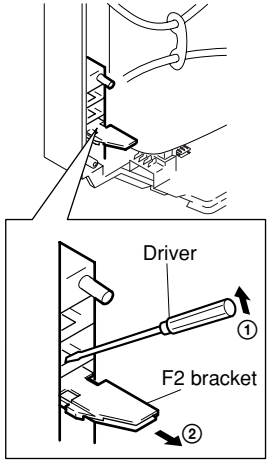
NOTE : Push the hook down using the tip of a screwdriver and at the same time pull the H1 bracket.



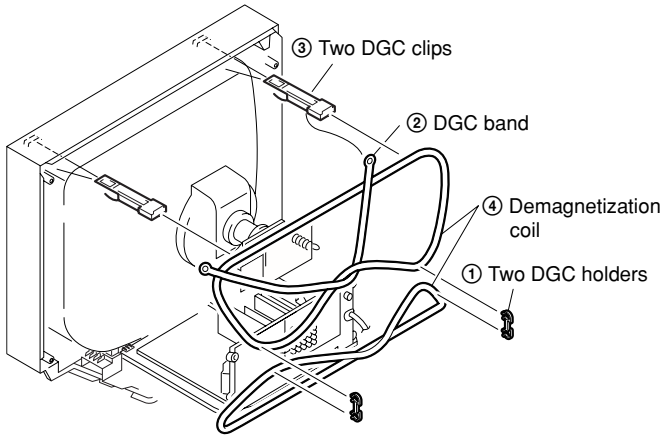
2-11. F2 BOARD REMOVAL

NOTE : To remove F2 board, firstly remove the H1 board. Then, push the hook down using the tip of a screwdriver and at the same time pull the F2 bracket.

Caution : When removing the F2 board, please turn off the main AC supply and disconnect the AC plug.

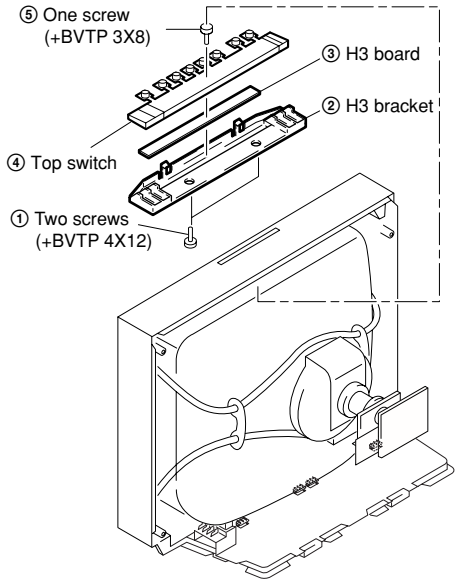


2-12. DEMAGNETIZATION COIL REMOVAL



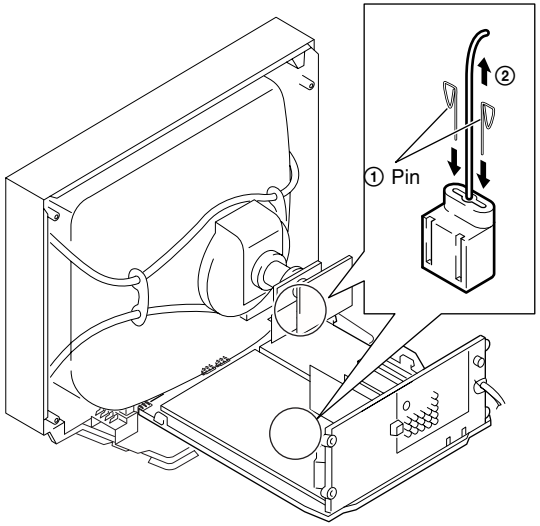
2-13. TOP SWITCH REMOVAL (H3 BOARD REMOVAL)

NOTE : To remove H3 board, the CRT has to be removed first.



2-14. G2 LEAD REMOVAL

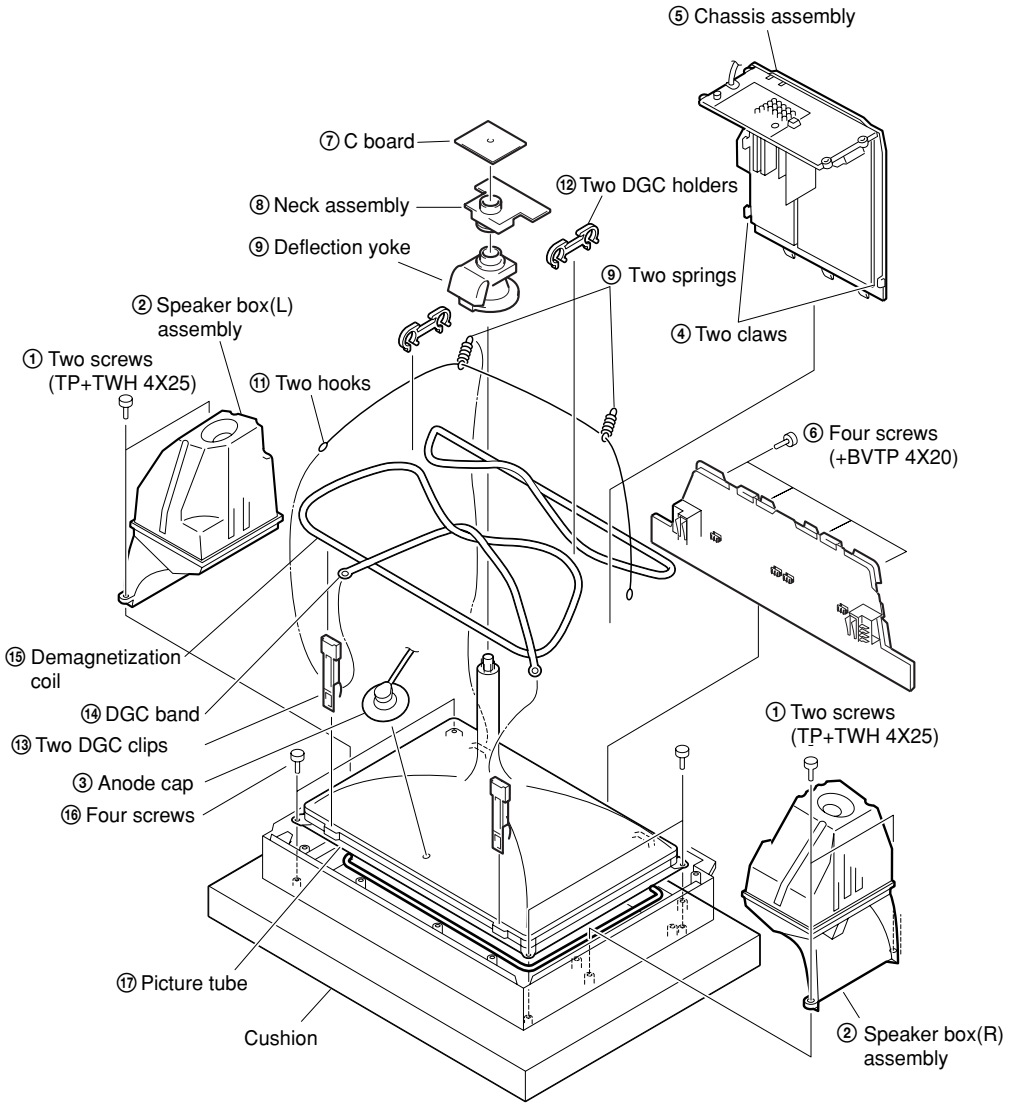
NOTE : Insert pin to both edge holes on socket and release the lock.



2-15. PICTURE TUBE REMOVAL

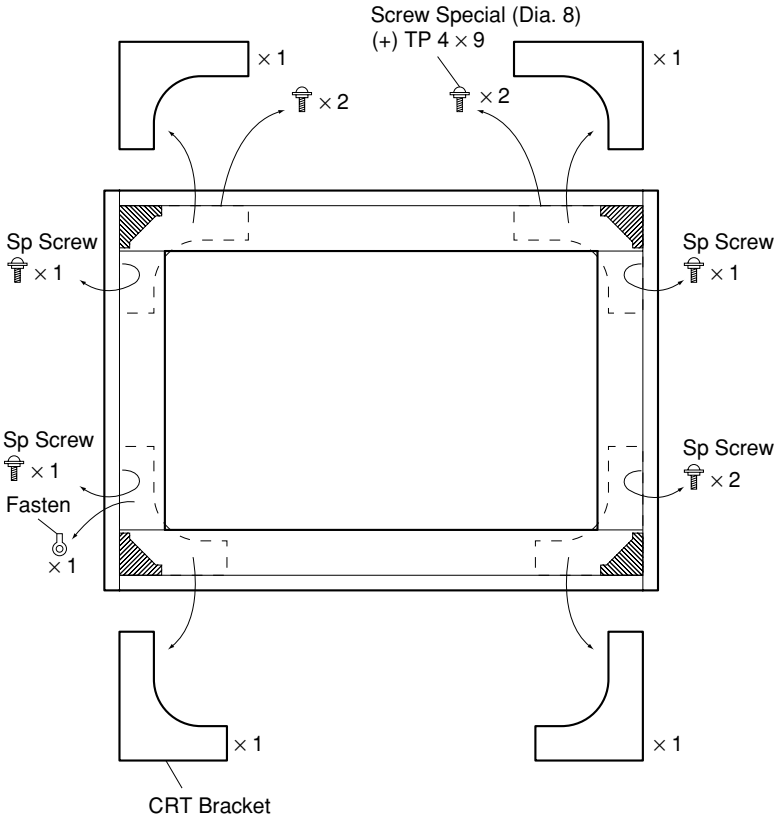
i) Prior to picture tube removal, please remove the front cover first.

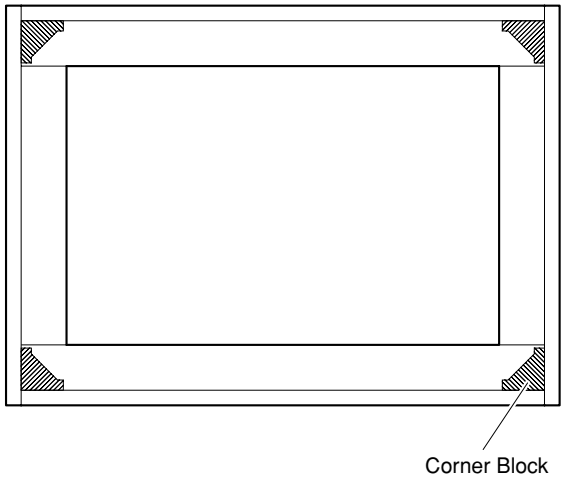
Caution : Aluminium frame is easily scratched if extra caution is not taken when handling it.



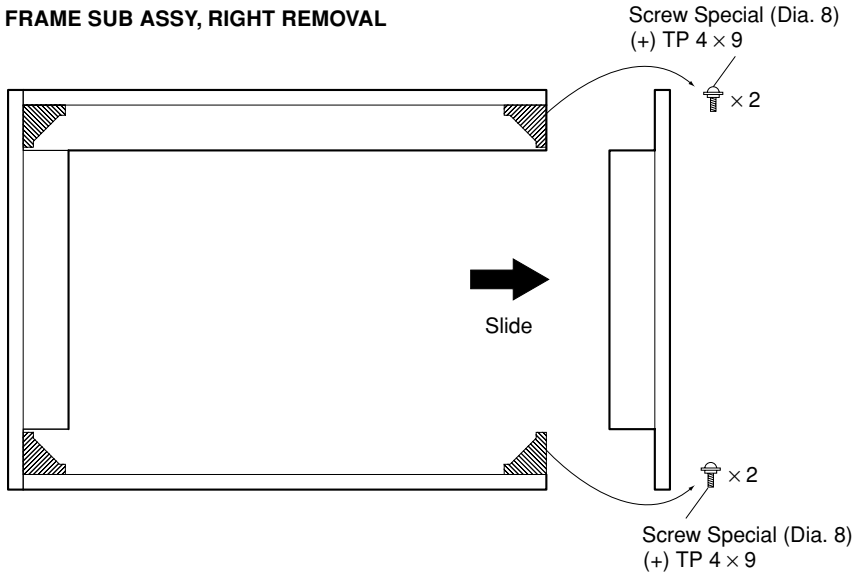
2-16. FRAME SUB-ASSY DISASSEMBLY

①

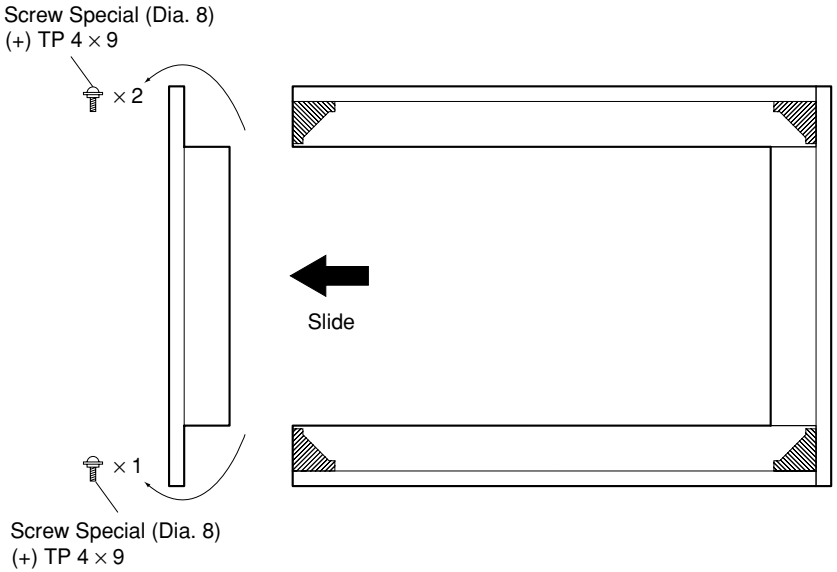




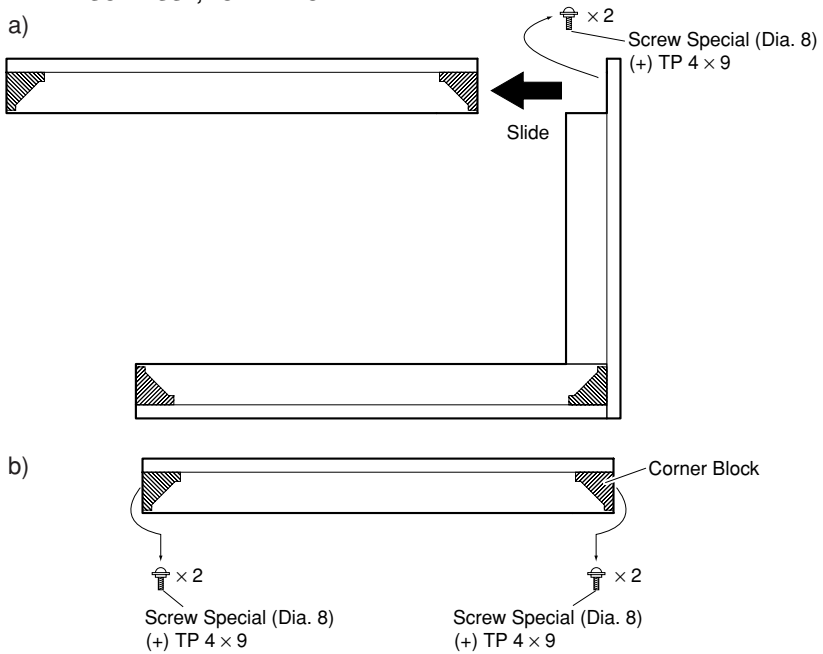
FRAME SUB ASSY, RIGHT REMOVAL



FRAME SUB ASSY, LEFT REMOVAL

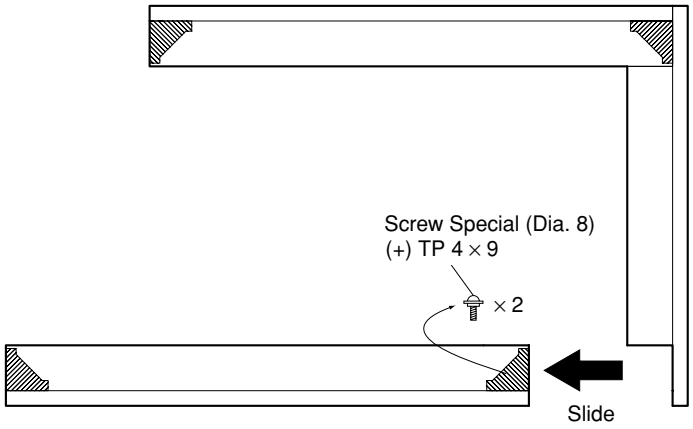


FRAME SUB ASSY, TOP REMOVAL

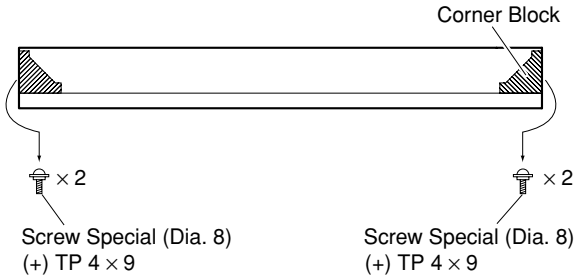


FRAME SUB ASSY, BOTTOM REMOVAL

a)



b)

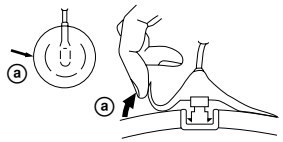


NOTE : When replacing the Frame Sub-Assy Top and Bottom, fix the original corner block to the new part.

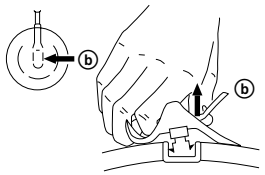
• REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

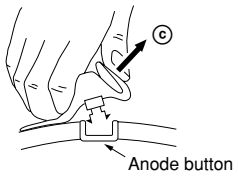
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



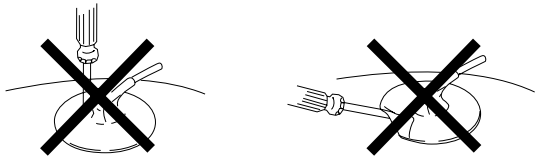
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.

- **HOW TO HANDLE AN ANODE-CAP**

① Do not damage the surface of anode-caps with sharp shaped objects.
② Do not press the rubber too hard so as not to damage the inside of anode-cap. A metal fitting called the shatter-hook terminal is built into the rubber.
③ Do not turn the foot of rubber over too hard. The shatter-hook terminal will stick out or damage the rubber.

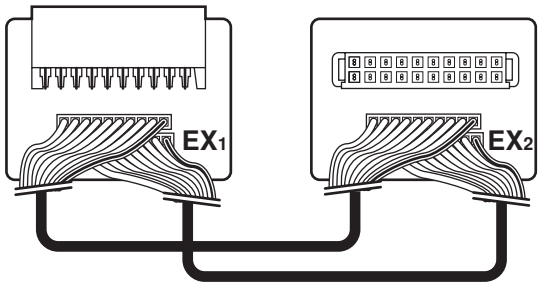


SECTION 3
SERVICE JIG

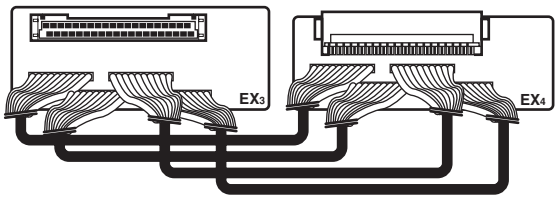
3-1. JIGS REQUIRED FOR SERVICING

REF NO.	DESCRIPTION	PART NO.	REMARK
J-1	TOOL (20P), SERVICE	3-702-763-01	For A to V board extension
J-2	TOOL (40P), SERVICE	3-702-764-01	For A to E board extension
J-3	TOOL (50P-A), SERVICE	3-702-765-01	For A to B3 board extension
J-4	TOOL (50P-J), SERVICE	3-702-766-01	For A to J board extension For D to D1 board extension

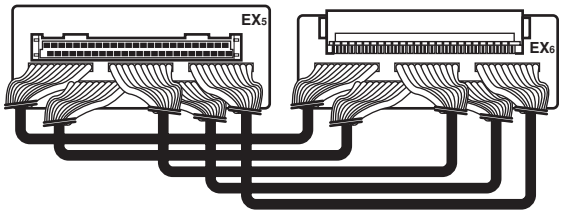
J-1



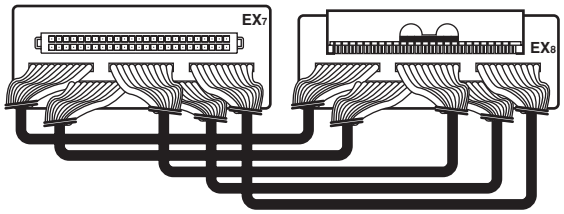
J-2



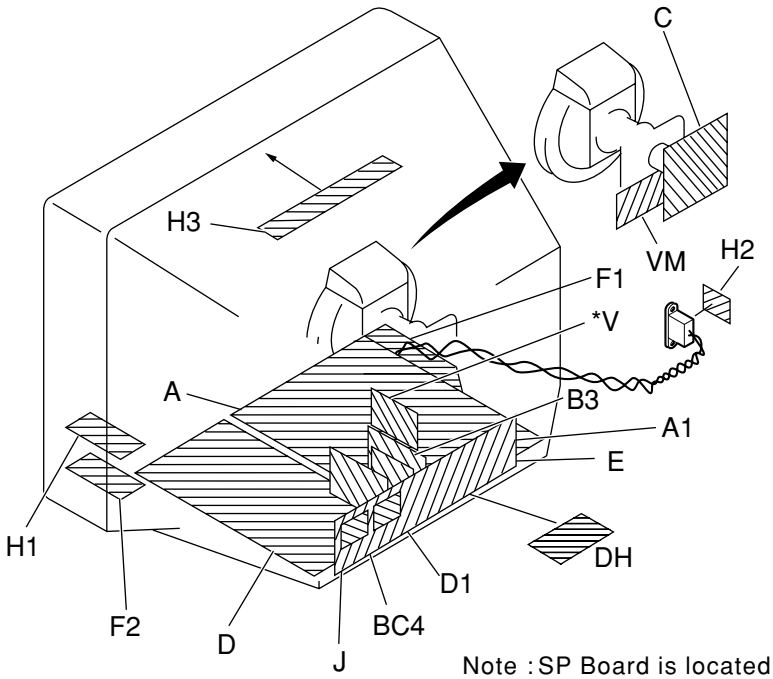
J-3



J-4



SECTION 4
CIRCUIT BOARDS LOCATION



Note : SP Board is located at the Duct, speaker
*: V Board (except KV-ES38N90)

SECTION 5
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:

PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

.....

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

5-1. BEAM LANDING

1. Input a white signal with the pattern generator.
   Contrast } normal
   Brightness }
2. Position neck assy as shown in Fig 5-1.
3. Set the pattern generator raster signal to a green raster.
4. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side. (See Figures 5-1 through 5-3.)
5. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 5-2.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Figure 5-4.)

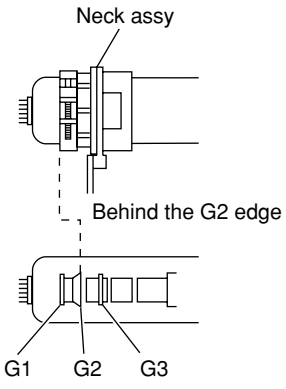


Fig. 5-1

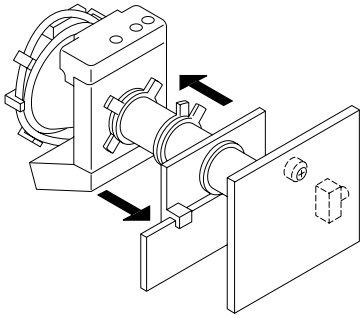


Fig. 5-2

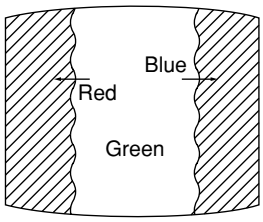


Fig. 5-3

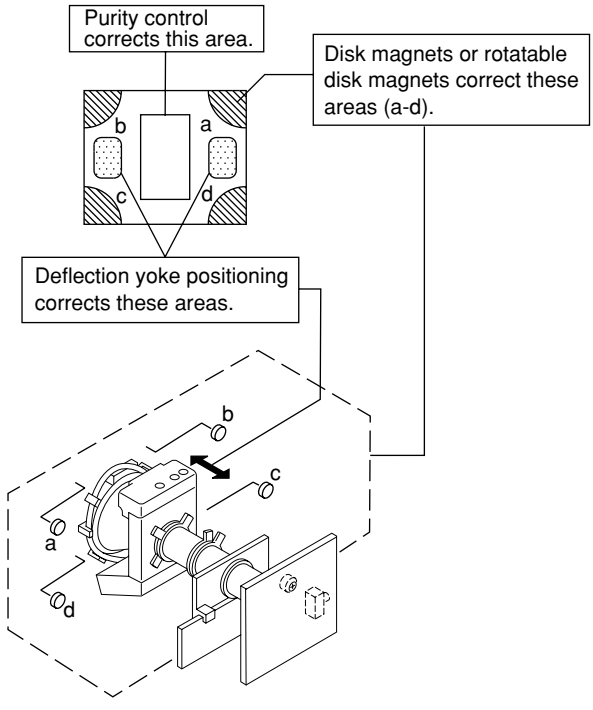


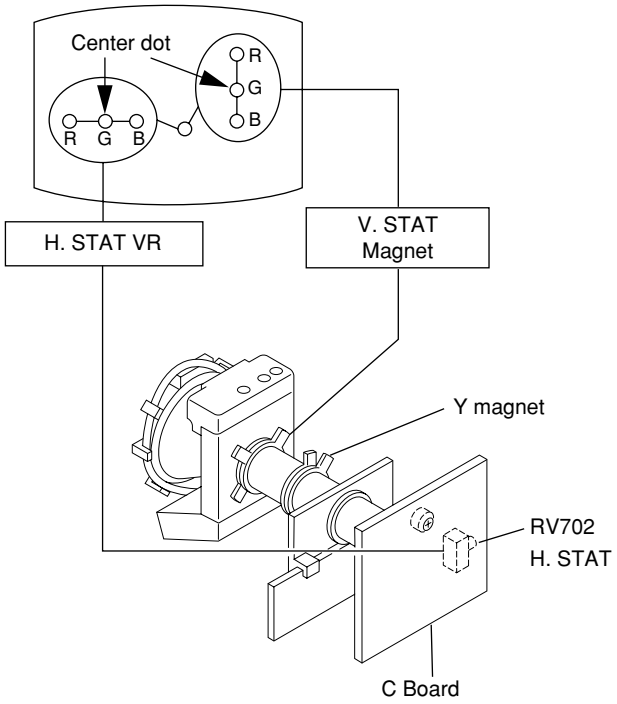
Fig. 5-4

5-2. CONVERGENCE ADJUSTMENT

Preparation :

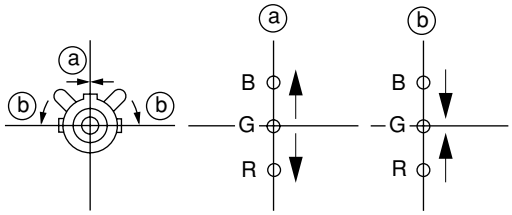
- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Set the Picture Mode to "STANDARD".
- Cross hatch / Dot pattern.

(1) Horizontal and Vertical Static Convergence

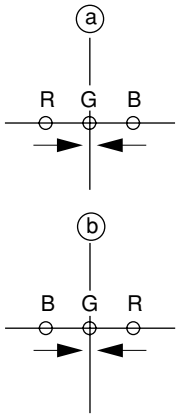


1. (Moving horizontally), adjust the H.STAT control so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
3. Adjust Horizontal Trapezoid with “DAC 04 HTR” in Service Mode to make H-Trapezoid distortion best.
4. If the H.STAT variable resistor cannot bring the red, green and blue dots together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other, so be sure to perform adjustments while tracking.)

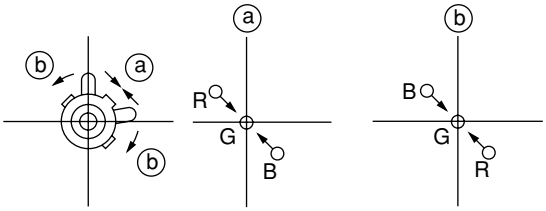
① V. STAT

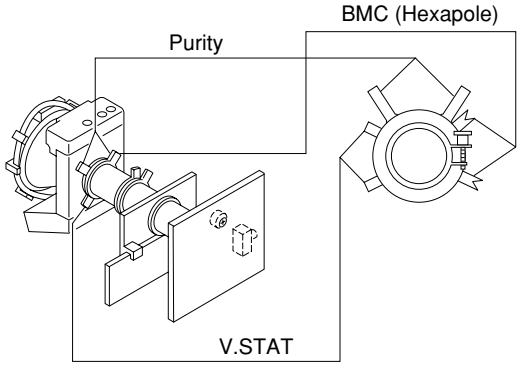


② H. STAT VR



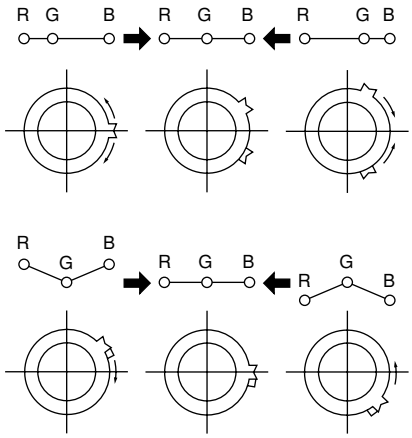
③





④ BMC (Hexapole) Magnet.

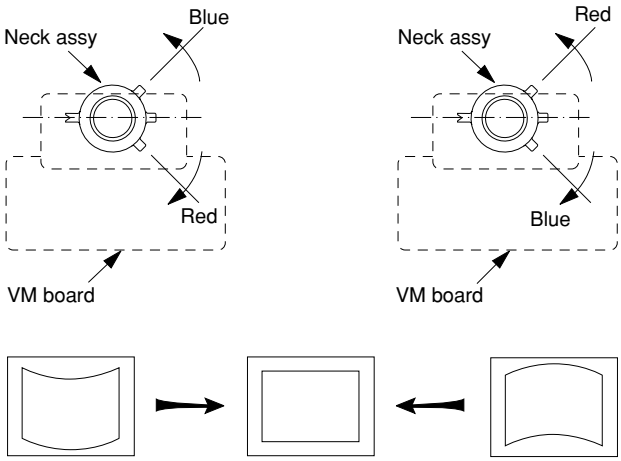
If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.



⑤ Y separation axis correction magnet adjustment.

1. Receive the cross-hatch signal and adjust [PICTURE] to [MIN] and [BRIGHTNESS] to [STANDARD] .

2. Adjust the Y separation axis correction magnet on the neck assembly so that the horizontal lines at the top and bottom of the screen are straight.



Note

1. The Red and Blue magnets should be equally far from the horizontal center line.
2. Do not separate the Red and Blue magnets too far. (Less than 8 mm)

(2) Dynamic Convergence Adjustment

Preparation:

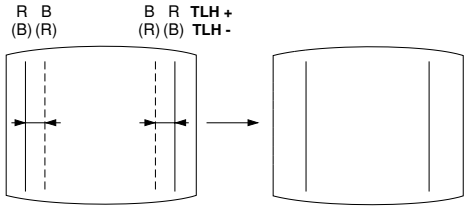
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence
- Set the PICTURE and BRIGHTNESS to normal.

1. Adjust TLH. (TLH correction piece)

① Receive the dot/hatch pattern signal and adjust picture quality by the menu.

② Correct horizontal mis-convergence of red and blue of both sides on the X axis.

When red is outside insert BMC magnet to right side (THL+) views from DY neck. And when blue is outside, insert it to left side (THL–) and take both sides.

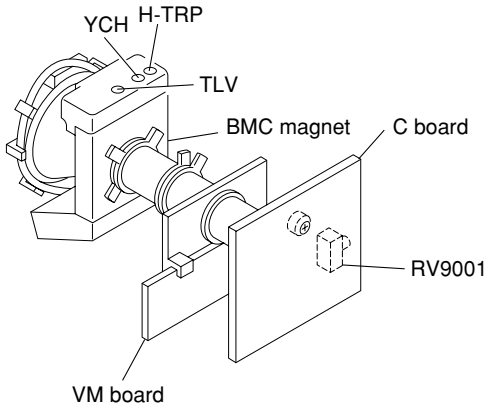


2. Adjust V-TILT-TLV.

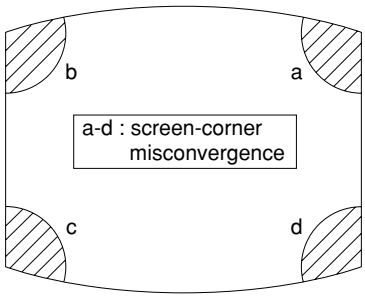
Correct the vertical mis-convergence of red and blue of vertically sides on the Y axis.

3. Adjust YCH.

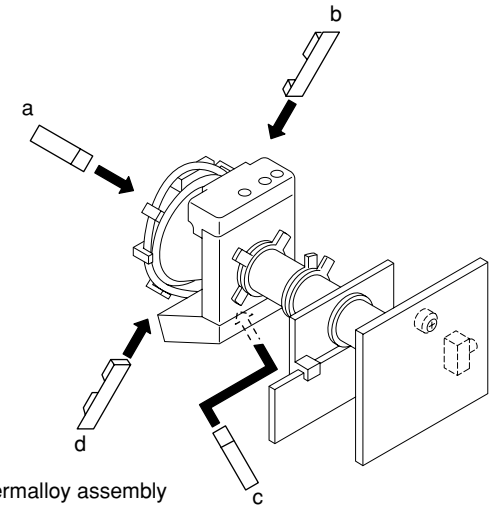
Adjust horizontal mis-convergence of red and blue of vertically sides on the Y axis. Mentioned above steps 2 to 4 are adjusting respectively perform minuteness tracking.



(3) Screen-corner Convergence



Fix a Permalloy assy corresponding to the misconverged areas.

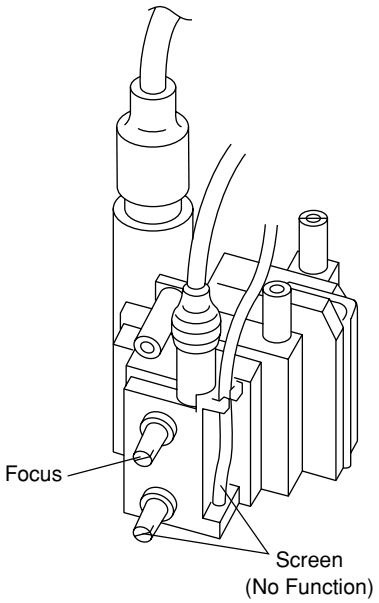


5-3. FOCUS ADJUSTMENT

Note

Focus adjustment should be completed before W/B adjustment.

(1) Receive digital monoscope pattern.
(2) Set "A/V CONTROL" to "STANDARD".
(3) Adjust FOCUS VR so that the center of the screen becomes justfocus.
(4) Change the receiving signal to white pattern and blue back.
(5) Confirm MAGENTA RING should not be over the limit sample. In case MAGENTA RING is over the limit sample, adjust FOCUS VR to take tracking of MAGENTA RING and FOCUS.



FLYBACK TRANSFORMER (T6803)

5-4. NECK ASSY TWIST ADJUSTMENT

(1) Receive dot/hatch pattern.
(2) Turn FOCUS VR fully counter-clockwise.
(3) Confirm the dot shape at the screen center. (Fig. 5-4)
(4) Resume FOCUS VR.

Note

In case of turning NECK ASSY, loosen the screw 3 turns. Do not move the position.

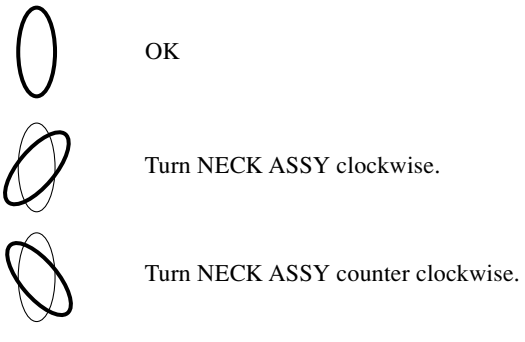
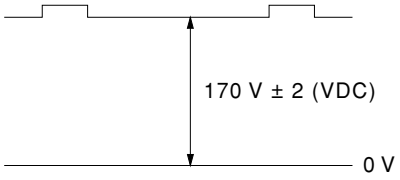


Fig. 5-4

5-5. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G and B of the C board cathode to the oscilloscope.
4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
5) Whilst watching the picture, adjust the screen VR (RV9002) located on the C board to the point just before the flyback return lines disappear (to the point before cut-off)



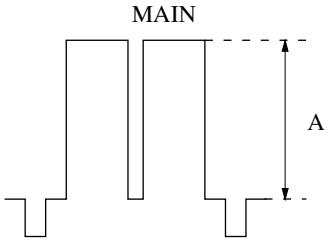
2. WHITE BALANCE ADJUSTMENT

1) Set to Service Mode (Refer Section 6-1: ADJUSTMENTS WITH COMMANDER).
2) Input white raster signal.
3) Set the following condition.
   PICTURE minimum, BRIGHTNESS 50%
4) Select GCT (WHB 7) and BCT (WHB 8) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
5) Set the PICTURE to maximum.
6) Select GDR (WHB 4) and BDR (WHB 5) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
7) Write into the memory by pressing [MUTING] then [0].

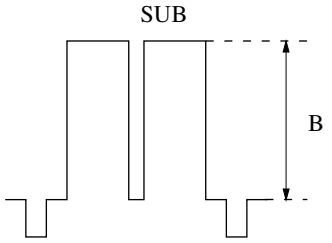
3. SUB PICTURE BRIGHTNESS ADJUSTMENT

1) Tune RF PAL white signal at program No. 1 and No. 2.
2) Select “TWIN PICTURE” mode.
3) Receive different RF PAL white signals in MAIN and Sub picture.
4) Adjust RV3300 on A PWB, so that the output from the 17 pin and 20 pin of the CN1180 becomes within the spec.

CVBS 1
17 pin



CVBS 2
20 pin



Spec: |A - B| ≤ ± 20mV

SECTION 6
CIRCUIT ADJUSTMENTS

6-1. ADJUSTMENTS WITH COMMANDER

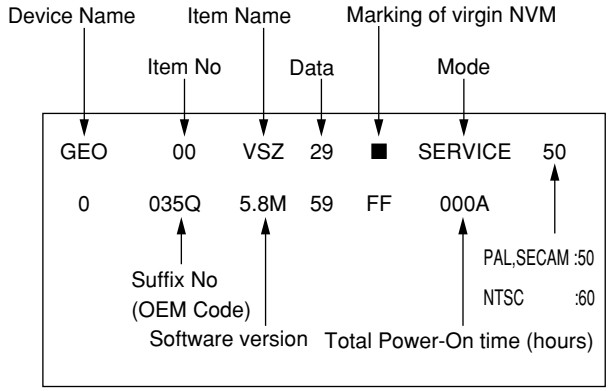
Service adjustments are made with the RM-916 that comes with this unit.

a. ENTERING SERVICE MODE

This operation sequence puts the unit into service mode.

→ [DISPLAY] → [5] → [VOL (+)] → [POWER]

The screen display is :



b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

c. METHOD OF WRITE INTO MEMORY

1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN), select an item of adjustment.
3) Press [MUTING] button and it will indicate WRITE on the screen.
4) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again to confirm adjustments were made.

The screen display is :

[1], [4]	Select the adjustment item.
↓	
[3], [6]	Raise/lower the data value.
↓	
[MUTING]	Writes.
↓	
[0]	Executes the writing.

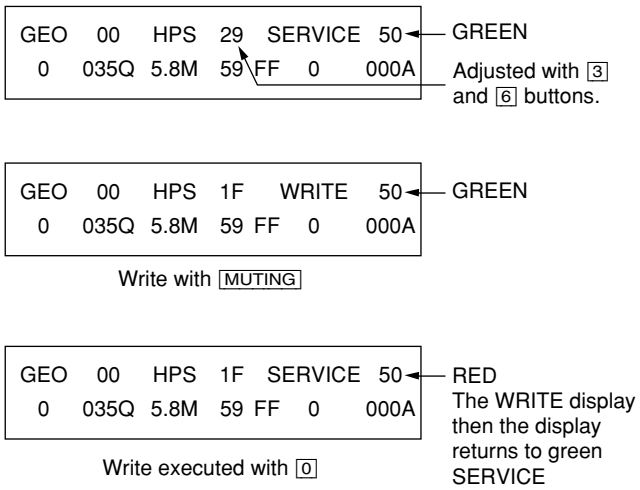
[7], [0]	All the data becomes the values in memory.
[8], [0]	All user control goes to the standard state.
[5], [0]	Service data initialization (Be sure not to use usually.)
[DISPLAY], [0]	Write 50Hz adjustment data to 60Hz, or vice versa.
[2], [0]	Write 50Hz adjustment data to 60Hz, or vice versa.
[Cursor +/-]	Copy and write all data. example: GEO 00 VSZ ↕ DAC 00 HCT

6-2. ADJUSTMENT METHOD

Item Number 00 of device GEO

This explanation uses V-size as an example.

1. Select "GEO 00 VSZ" with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)


GEO 00 HPS 29 SERVICE 50
0 035Q 5.8M 59 FF 0 000A
GREEN
Adjusted with 3 and 6 buttons.
GEO 00 HPS 1F WRITE 50
0 035Q 5.8M 59 FF 0 000A
GREEN
Write with MUTING
GEO 00 HPS 1F SERVICE 50
0 035Q 5.8M 59 FF 0 000A
RED
The WRITE display then the display returns to green SERVICE
Write executed with 0

Use the same method for all Items. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

Note : 1. In [WRITE], the data for all items are written into memory together.

2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.
3. Additional function to skip category (device) to category (device).
   example:
   GEO 00 VSZ
   ↕
   DAC 00 XXX
   The buttons for the function above should be ⬆ and ⬇.

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	PAL 50								NTSC 60								Device Name
Categor-y	No.	Name					DRC 1250	DRC 1250V	PinP	PinPV	INDEX	TWIN	DRC 100	DRC 100V	DRC 1250	60 VC	PinP	PinPV	INDEX	TWIN	DRC 100	DRC 100V	
GEO	00	VSZ	21	3F	V SIZE	FF/4P*50/60*VC/NC, TW/IX*50/60	1B	21	1B	21	20	20	1C	20	1D	21	1D	21	20	23	1E	23	CXA2100AQ
	01	VPS	27	3F	V POSITION	FF/4P*50/60*VC/NC, TW/IX*50/60	25	24	25	24	23	25	23	23	27	27	27	27	25	29	25	25	
	02	VLN	5	0F	V LINESRITY	FF/R4/PR*50/60*VC/NC	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	06	
	03	SCO	0A	0F	S CORRECTION	FF/R4/PR*50/60*VC/NC	07	07	07	07	07	07	07	07	07	07	07	07	07	07	07	07	
	04	HSZ	1E	3F	H SIZE	FF/4P*50/60*VC/NC, TW/IX*50/60	26	27	26	27	1E	1E	27	27	24	24	24	24	23	1F	25	25	
	05	HPS	2F	3F	H POSITION	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	38	36	38	35	3B	3C	38	36	30	2F	30	30	31	36	31	2F	
	06	DVH	5	0F	H POSITION OFFSET FOR DVD	50/60Hz (DVD)	06	06	06	06			06		07	07	07	07			07	07	
	07	PAP	28	3F	PIN AMP	FF/R4/PR*50/60*VC/NC	21	1F	21	1C	21	21	21	21	1F	20	1F	1F	1F	1F	23	1E	
	08	UPN	25	3F	UPPER CONER PIN	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	1E	1D	1E	1D	1D	1E	1D	1D	1C	23	1C	1E	1C	1C	1B	14	
	09	LPN	23	3F	LOWER CONER PIN	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	1C	16	1C	16	1B	1C	1D	1D	1B	1A	1B	1A	1B	1B	1E	19	
	0A	TRZ	0C	0F	TRAPEZIUM	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	08	08	08	07	07	09	05	05	08	08	08	08	07	09	04	05	
	0B	AGL	0A	0F	AFC ANGLE	FF/R4/PR*50/60*VC/NC	07	07	06	07	06	06	06	06	07	07	06	07	06	06	07	06	
	0C	BOW	6	0F	AFC BOW	FF/R4/PR*50/60*VC/NC	08	07	07	06	07	07	07	07	07	07	08	07	08	08	08	08	
	0D	**LBL**	12	3F	LEFT H BLANKING	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	11	11	11	11	11	11	11	11	1C	1C	1C	1C	1C	1C	1C	1C	
	0E	**RBL**	2C	3F	RIGHT H BLANKING	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	2C	2C	2C	2C	2C	2C	2C	2C	23	23	23	23	23	23	23	23	
	0F	**MPN**	0	3	MIDDLE PIN DISTORTION COMPENSATION	50/60*VC/NC	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
	10	**UVL**	0	0F	UPPER LINEARITY	50/60Hz	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
	11	**LVL**	0	0F	LOWER LINEARITY	50/60Hz	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
	12	**HCP**	0	3	HORIZONTAL HIGH VOLTAGE COMPENSATION	50/60*VC/NC	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
	13	**VCP**	1	3	VERTICAL HIGH VOLTAGE COMPENSATION	50/60*VC/NC	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
	14	**VAS**	2F	3F	V ASPECT	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	2F	2E	2F	2E	2F	30	2F	2E	2F	31	2F	31	2F	2E	2F	30	
	15	**VSC**	1F	3F	V SCROLL	FF/R4/PR*50/60*VC/NC, TW/IX*50/60	22	22	22	22	22	24	22	22	22	22	22	22	22	23	22	22	
	16	**USC**	0	1	UNDER-SCAN MODE ON/OFF	50/60*VC/NC																	
	17	**VBW**	0	3	V BLANKING WIDTH CONTROL	FF/R4/PR*50/60*VC/NC	00	03	00	03	00	00	00	03	00	03	00	03	00	00	00	03	
	18	**AT1**	2	3	AKB REFERENCE TIMING	FF/R4/PR*50/60*VC/NC	02	03	02	03	02	02	02	03	02	03	02	03	02	02	02	03	
	19	**CPY**	0	1	COPY THE GEO DATA TO ALL 50/60HZ NVM AREA																		

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	PAL 50								Eco Mode				NTSC 60								Device Name
Category	No.	Name					DRC 1250	DRC 1250V	PinP	PinPV	INDEX	TWIN	DRC 100	DRC 100V	Eco On NC	Eco Off NC	Eco On VC	Eco Off VC	DRC 1250	60VC	PinP	PinPV	INDEX	TWIN	DRC 100	DRC 100V	
DAC	00	HCT	33	FF	H CENTER	50/60Hz	30	30	30	30	30	30	30	30					6B	6B	6B	6B	6B	6B	6B	6B	MB88141
	01	HLN	27	3F	H LINEARITY	FF/4P*50/60	30	30	30	30	30	30	30	30					33	33	33	33	33	33	33	33	
	02	MDP	26	3F	MIDDLE PIN	FF/4P*50/60	1A	1A	1A	1A	1A	1A	1A	1A					1A	1A	1A	1A	1A	1A	1A	1A	
	03	CCP	37	3F	LOWER CONER PIN	FF/4P*50/60	1F	1F	1F	1F	1F	1F	1F	1F					1F	1F	1F	1F	1F	1F	1F	1F	
	04	HTR	26	3F	HORIZONTAL TRAPEZIUM	FF/4P*50/60	1F	1F	1F	1F	1F	1F	1F	1F					1F	1F	1F	1F	1F	1F	1F	1F	
	05	**DF**	01	1	DF ON/OFF SWITCH	FF/4P*50/60	01	01	01	01	01	01	01	01					01	01	01	01	01	01	01	01	
	06	**DPH**	1F	3F	DF PHASE	FF/4P*50/60	27	27	27	27	27	27	27	27					27	27	27	27	27	27	27	27	
	07	**QPH**	19	3F	QP PHASE	FF/4P*50/60	15	15	15	15	15	15	15	15					15	15	15	15	15	15	15	15	
	08	**QAC**	23	3F	QP AMPLITUDE	FF/4P*50/60	23	23	23	23	23	23	23	23					23	23	23	23	23	23	23	23	
	09	**QDC**	20	3F	QP DC LEVEL	FF/4P*50/60	20	20	20	20	20	20	20	20					20	20	20	20	20	20	20	20	
	0A	**QDV**	1F	3F	QP V MODULATION	FF/4P*50/60	1D	1D	1D	1D	1D	1D	22	22					1E	1E	1E	1E	1E	1E	24	24	
	0B	**QAV**	1A	3F	QP AMPLITUDE MODULATION	FF/4P*50/60	3F	3F	3F	3F	3F	3F	3F	3F					3F	3F	3F	3F	3F	3F	3F	3F	
	0C	**ABC**	0	FF	ABL D/A CONTROL	ECO on/off*VC/NC									00	00	7E	7E									
	0D	**CPY**	0	1	COPY THE GEO DATA TO ALL 50/60HZ NVM AREA																						

TVG	Functionality		Initial	Range	Function	Table and Note	Common	Device Name
Category	No.	Name						
WHB	00	**CBO**	7	0F	DC OFFSET CANCELLER FOR CB1		0A	CXA2100AQ
	01	**CRO**	7	0F	DC OFFSET CANCELLER FOR CR1		0A	
	02	SBR	18	3F	SUB BRIGHTNESS CONTROL		22	
	03	**RDR**	29	3F	R DRIVE		29	
	04	GDR	25	3F	G DRIVE		25	
	05	BDR	26	3F	B DRIVE		20	
	06	**RCT**	29	3F	R CUTOFF		24	
	07	GCT	12	3F	G CUTOFF		07	
	08	BCT	31	3F	B CUTOFF		2F	
	09	**SBO**	29	3F	SUB BRIGHTNESS OFFSET	EXCEPT PICTURE MODE, DYNAMIC	1C	
	0A	**RDO**	1F	3F	R DRIVE OFFSET	EXCEPT PICTURE MODE, DYNAMIC	1F	
	0B	**GDO**	1A	3F	G DRIVE OFFSET	EXCEPT PICTURE MODE, DYNAMIC	1B	
	0C	**BDO**	1A	3F	B DRIVE OFFSET	EXCEPT PICTURE MODE, DYNAMIC	1B	
	0D	**RCO**	1F	3F	R CUTOFF OFFSET	EXCEPT PICTURE MODE, DYNAMIC	1F	
	0E	**GCO**	1E	3F	G CUTOFF OFFSET	EXCEPT PICTURE MODE, DYNAMIC	1F	
	0F	**BCO**	15	3F	B CUTOFF OFFSET	EXCEPT PICTURE MODE, DYNAMIC	1A	

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	Common			ECO MODE				50			60			PICTURE MODE				Device Name
Category	No.	Name						Twin	Index	Eco On NC	Eco Off NC	Eco On VC	Eco Off VC	TV	Vid-eo	DVD	TV	Vid-eo	DVD	Dynamic	Standard Drama	Hi-Fin /Soft	Personal	
SAJ	00	**PIC**	3F	3F	PICTURE CONTROL	EXCEPT PICTURE MODE, PERSONAL														3F	32	28		CXA2100AQ
	01	**BRT**	1F	3F	BRIGHTNESS CONTROL	EXCEPT PICTURE MODE, PERSONAL														23	1F	1B		
	02	**COL**	27	3F	COLOR CONTROL	EXCEPT PICTURE MODE, PERSONAL														32	23	23		
	03	**HUE**	1F	3F	HUE CONTROL	EXCEPT PICTURE MODE, PERSONAL														1F	1F	1F		
	04	**SHP**	24	3F	SHARPNESS CONTROL	EXCEPT PICTURE MODE, PERSONAL														22	1F	1D		
	05	**VML**	3	3	VM LEVEL	PICTURE MODE														03	03	01	03	
	06	**DYC**	1	1	DYNAMIC COLOR ON/OFF	PICTURE MODE														01	01	00	01	
	07	**CTM**	0	1	COLOR TEMPERATURE FOR DYNAMIC COLOR	PICTURE MODE														00	00	00	00	
	08	**CAX**	2	3	COLOR MATRIX SPECIFICATION	50/60Hz								02	02	02	00	00	00					
	09	**GMA**	3	3	GAMMA CORRECTION	PICTURE MODE														02	02	03	02	
	0A	**DCT**	1	3	DC TRANSMISSION CONTROL	PICTURE MODE														01	01	00	01	
	0B	**DPL**	1	3	AUTO PEDESTAL LEVEL CONTROL	PICTURE MODE														02	01	00	01	
	0C	**ABM**	0	3	ABL MODE CONTROL	PICTURE MODE														01	00	00	00	
	0D	**ABT**	0	3	ABL CURRENT DETECTION VTH CONTROL	Eco on/off*VC/NC				02	00	02	00											
	0E	**CLO**	9	0F	COLOR OFFSET	50/60*TV/Video								09	08		09	09						
	0F	**CLW**	3	7	COLOR STEP WIDTH TO THE CHANGE OF S/N		03																	
	10	**HUO**	9	0F	HUE OFFSET	50/60*TV/Video								08	08		09	09						
	11	**SHO**	7	1F	SHARPNESS OFFSET	50/60*TV/Video/DVD								14	17	0F	0C	0F	0F					
	12	**SHW**	1	7	SHARPNESS STEP WIDTH TO THE CHANGE OF S/N		01																	
	13	**PIO**	5	7	PICTURE OFFSET FOR TWIN/INDEX	Twin/Index		07	07															
	14	**BRO**	7	0F	BRIGHTNESS OFFSET	Eco on/off*VC/NC				07	07	07	07											

TVG	Functionality		Initial	Range	Function	Table and Note	Common	50			60			PICTURE MODE				Device Name
Category	No.	Name						TV	Video	DVD	TV	Video	DVD	Dynamic	Standar /Drama	Hi-Fine Soft	Personal	
JGL	00	**PON**	1	1	RGB AND AKB REFERENCE PULSE OUTPUT ON/OFF		01											CXA2100AQ
	01	**RGB**	7	7	RGB OUTPUT SELECTION		07											
	02	**AGG**	0	3	AGING MODE SELECTION		00											
	03	**DPS**	0	1	Y/C DELAY LINE PASS MODE SWITCH		00											
	04	**BBT**	3	3	RGB BOTTOM LIMITTER CONTROL		03											
	05	**LML**	0	3	RGB AMPLITUDE LIMITTER CONTROL		00											
	06	**PAB**	0F	0F	DC LEVEL FOR PEAK ABL		0F											
	07	**SCO**	0C	0F	SUB PICTURE CONTROL		08											
	08	**LV2**	7	0F	RGB LEVEL FOR RGB2		07											
	09	**SF0**	1	1	SHARPNESS CIRCUIT F0	50/60*TV/Video/DVD		01	01	01	01	01	01					
	0A	**PRO**	0	3	PRE/OVER-SHOOT RATIO CONTROL	50/60*TV/Video/DVD		00	03	03	03	03	03					
	0B	**LTI**	2	3	LUMINANCE TRANSIENT IMPROVEMENT	PICTURE MODE								02	02	00	02	
	0C	**CTI**	1	3	CHROMINANCE TRANSIENT IMPROVEMENT	PICTURE MODE								01	01	00	01	

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	Common					50			60			Device Name
Category	No.	Name						2D Comb	3D Comb	S-Input	Others	TV	Video	DVD	TV	Video	DVD	
YCT	00	TNT	1F	3F	TINT ADJUSMENT FOR NTSC	TV/Video						24	1F		24	1F		CXA2123Q
	01	**PNG**	0	1	PAL/NTSC GATE WIDTH		01											
	02	**PNI**	0	1	PAL/NTSC SENSITIVITY SW		00											
	03	SCL	7	0F	SUB COLOR CONTROL	50/60*TV/Video						05	07		04	07		
	04	SCT	8	0F	SUB CONTRAST CONTROL	50/60*TV/Video						08	07		07	07		
	05	**SF0**	2	3	SHARPNESS CENTER FREQUENCY CHANGING		02											
	06	**SEQ**	3	3	SHARPNESS EQUALIZER CHARACTERISTIC		03											
	07	**SHG**	5	0F	SHARPNESS GAIN CONTROL	50/60*TV/Video/DVD						05	05	07	06	06	07	
	08	YOL	1F	3F	Y-OUTPUT LEVEL CONTROL		1F											
	09	**BSP**	0	3	BLACK STRETCH START POINT CHANGING		00											
	0A	COL	1F	3F	CB/CR OUTPUT LEVEL CONTROL		1A											
	0B	**DCR**	0	3	DC RESTORATION RATIO ADJUSTMENT		00											
	0C	**BF0**	1	3	BPF/TQF F0 ADJUSTMENT		01											
	0D	**BFQ**	2	3	BPF/TQF Q ADJUSTMENT		02											
	0E	**FSW**	1	1	BPF/TQF SWITCH		01											
	0F	**SDT**	1	1	SECAM DOUBLE TRAP SWITCH		01											
	10	**LPF**	1	1	Y/CB/CR LPF SWITCH		01											
	11	**YDL**	6	0F	Y-DL TIME ADJUSMENT	2D Comb/3D comb/ S-input/othes		06	05	03	05							
	12	**CMT**	0	1	CB/CR OUTPUT MUTE SWITCH		00											
	13	**BO1**	7	0F	CB OFFSET1 ADJUSTMENT (MAIN ROUTE)		07											
	14	**RO1**	7	0F	CB OFFSET1 ADJUSTMENT		07											
	15	**CDF**	0	7	V COUNT DOWN FREQUENCY SWITCH	forced 50Hz for no signal	00											
	16	**CDM**	0	3	V COUNT DOWN JUDGE SWITCH		00											
	17	**AFC**	0	3	AFC SENSITIVITY SWITCH	TV/Video/DVD							00	00		00	00	
	18	**MVM**	0	1	MACROVISION + AFC MASK		00											
	19	**SRY**	7	0F	SECAM R-Y BLACK ADJUSTMENT		07											
	1A	**SBY**	1	0F	SECAM B-Y BLACK ADJUSTMENT		01											
	1B	**BEL**	2	3	SECAM BELL/HPF SWITCHING		02											
	1C	**BLF**	0	1	BELL F0 ADJUSTMENT		00											
	1D	**SVI**	0	1	SECAM V-ID SWITCH		00											
	1E	**SGP**	0	3	SECAM GATE POSITION ADJUSTMENT		00											
	1F	**SID**	1	1	SECAM SENSITIVITY SWITCH	except SECAM	01											
	20	**SIH**	0	1	SECAM INHIBITION SWITCH		00											
	21	**STP**	0	1	Y BLACK LEVEL SETUP FOR PAL PLUS		00											
	22	**HVC**	2	3	H-VCO TEMPERATURE CHARACTER CANCELLING		02											
	23	**3NR**	1	1	3D NR OPERATION ON/OFF		01											
	24	**BW6**	1	1	3D NR FOR 60HZ NON-BUST SIGNAL ON/OFF		01											
	25	**WSH**	0	3	SHARPNESS GAIN STEP FOR NOISE REDUCTION		00											
	26	**WCO**	0	3	DC RESTORATION RATIO ADJUSTMENT		00											

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	Common	COLOR MODE				50		60		DVD	Device Name
Category	No.	Name						S-Input	SECAM	NTSC	PAL	TV	Video	TV	Video		
SYC	00	TNT	1F	3F	TINT ADJUSMENT FOR NTSC	TV/Video						21	20	21	20		CXA2123Q
	01	**PNG**	0	1	PAL/NTSC GATE WIDTH		01										
	02	**PNI**	0	1	PAL/NTSC SENSITIVITY SW		00										
	03	SCL	7	0F	SUB COLOR CONTROL	50/60*TV/Video						06	07	06	07		
	04	SCT	7	0F	SUB CONTRAST CONTROL	50/60*TV/Video						08	08	07	07		
	05	**SF0**	2	3	SHARPNESS CENTER FREQUENCY CHANGING		02										
	06	**SEQ**	3	3	SHARPNESS EQUALIZER CHARACTERISTIC		03										
	07	**SHG**	7	0F	SHARPNESS GAIN CONTROL		07										
	08	YOL	1F	3F	Y-OUTPUT LEVEL CONTROL		1F										
	09	**BSP**	0	3	BLACK STRETCH START POINT CHANGING		00										
	0A	COL	1F	3F	CB/CR OUTPUT LEVEL CONTROL		3C										
	0B	**DCR**	0	3	DC RESTORATION RATIO ADJUSTMENT		00										
	0C	**BF0**	1	3	BPF/TQF F0 ADJUSTMENT		01										
	0D	**BFQ**	2	3	BPF/TQF Q ADJUSTMENT		02										
	0E	**FSW**	1	1	BPF/TQF SWITCH		01										
	0F	**SDT**	1	1	SECAM DOUBLE TRAP SWITCH		01										
	10	**LPF**	1	1	Y/CB/CR LPF SWITCH		01										
	11	**YDL**	3	0F	Y-DL TIME ADJUSMENT	PAL/NTSC/SECAM/S-Input		05	03	02	03						
	12	**NCM**	1	1	1-H ADDITION SWITCH		01										
	13	**CMT**	0	1	CB/CR OUTPUT MUTE SWITCH		00										
	14	**BO1**	7	0F	CB OFFSET1 ADJUSTMENT (MAIN ROUTE)		07										
	15	**RO1**	7	0F	CB OFFSET1 ADJUSTMENT		07										
	16	**CDF**	0	7	V COUNT DOWN FREQUENCY SWITCH		00										
	17	**CDM**	0	3	V COUNT DOWN JUDGE SWITCH		00										
	18	**AFC**	0	3	AFC SENSITIVITY SWITCH	(TV)/Video/DVD							00		00	00	
	19	**MVM**	0	1	MACROVISION + AFC MASK		00										
	1A	**SRY**	7	0F	SECAM R-Y BLACK ADJUSTMENT		07										
	1B	**SBY**	1	0F	SECAM B-Y BLACK ADJUSTMENT		01										
	1C	**BEL**	2	3	SECAM BELL/HPF SWITCHING		02										
	1D	**BLF**	0	1	BELL F0 ADJUSTMENT		00										
	1E	**SVI**	0	1	SECAM V-ID SWITCH		00										
	1F	**SGP**	0	3	SECAM GATE POSITION ADJUSTMENT		00										
	20	**SID**	1	1	SECAM SENSITIVITY SWITCH	except SECAM	01										
	21	**SIH**	0	1	SECAM INHIBITION SWITCH		00										
	22	**STP**	0	1	Y BLACK LEVEL SETUP FOR PAL PLUS		00										
	23	**HVC**	2	3	H-VCO TEMPERATURE CHARACTER CANCELLING		02										

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Common	Device Name
Category	No.	Name					
MSP	00	**WST**	15	FF	W/G STEREO THRESHOLD	15	MSP3415D
	01	**WBT**	EA	FF	W/G BILINGAUAL THRESHOLD	EA	
	02	**WLL**	5	FF	W/G MONOAURAL THRESHOLD	05	
	03	**WAC**	1	0F	W/G AGREEMENT COUNT	01	
	04	**WDL**	30	FF	W/G SEARCH DELAY	30	
	05	**NDL**	20	FF	NICAM SEARCH DELAY	20	
	06	**SDL**	10	FF	STEREO STATUS READ DELAY	10	
	07	**AGC**	1	1	AGC SWITCH AUTO/CONSTANT	01	
	08	**REL**	28	3F	AGC GAIN AT CONSTANT MODE	28	
	09	**CRM**	0	1	CARRIER MUTING ON/OFF	00	
	0A	**ACO**	1	1	AUDIO CLOCK ON/OFF	01	
	0B	**FP**	1B	7F	FM PRESCALE FOR NON-M SYSTEM	1B	
	0C	**FPM**	32	7F	FM PRESCALE FOR M SYSTEM	32	
	0D	**FH**	2D	7F	FM PRESCALE FOR HDEV	2D	
	0E	**FHM**	65	7F	FM PRESCALE FOR HDEV AND M	65	
	0F	**WGP**	2A	7F	W/G PRESCALE	2A	
	10	**NIP**	6D	7F	NICAM PRESCALE	6D	
	11	**ERR**	50	FF	AUTO FM SWITCH THRESHOLD	50	
	12	**VOL**	6D	FF	LOUDSPEAKER GAIN 0700H TO 07FFH	6D	

TVG	Functionality		Initial	Range	Function	Table and Note	Common	Initial Value (Detailed)				Device Name
Category	No.	Name						Dynamic	Standard/Drama	Hi-Fine/Soft	Personel	
AP	00	**BAS**	0A	0F	BASE CONTROL	EXCEPT PESONAL		0B	08	07		TDA7315
	01	**TRE**	0A	0F	TREBLE CONTROL	EXCEPT PESONAL		0B	09	07		
	02	LDN	1	1	LOUDNESS CONTROL		01					

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	Common				PICTURE MODE				Device Name
Category	No.	Name						Twin	TV	Video	Dynamic	Standard/Drama	Hi-Fine/Soft	Personal	
LTI	00	**LDH**	1	1	HISTOGRAM SEGMENT SELECTION		01								
	01	**CFS**	1	1	COUNTER FILTER SELECTION		01								
	02	**WLB**	0	1	LETTERBOX WINDOW SWITCH		00								
	03	**VDC**	1	1	VIDEO DEPENDENT CORING	PICTURE MODE					01	01	01	01	
	04	**DEM**	0	1	DEMONSTRATION MODE		00								
	05	**CDP**	4	07	LUMINANCE DELAY		04								
	06	**OSP**	0	1	OVERRULE SMART PEAKING		00								
	07	**WPO**	0	1	WHITE POINT STRETCH OFF		00								
	08	**DSK**	0	1	SKIN TONE SWITCH	PICTURE MODE					00	00	00	00	
	09	**ASK**	0	1	SKIN TONE ANGLE SELECTION		00								
	0A	**WSK**	0	1	SKIN TONE WIDTH SELECTION		00								
	0B	**SSK**	0	1	SKIN TONE SIZE SELECTION		00								
	0C	**DGR**	1	1	GREEN ENHANCEMENT SWITCH	PICTURE MODE AND MULTIPLE MODE		00			01	01	00	01	
	0C	**DGR**	1	1	GREEN ENHANCEMENT SWITCH	PICTURE MODE AND MULTIPLE MODE		00			00	00	00	00	(KV-ES38M31 ONLY)
	0D	**DGT**	7	7	THRESHOLD OF GREEN ENHANCEMENT SWITCH		07								
	0E	**GGR**	0	1	GREEN ENHANCEMENT GAIN		00								
	0F	**WGR**	0	1	GREEN ENHANCEMENT WITDH		00								
	10	**SGR**	0	1	GREEN ENHANCEMENT SIZE		00								
	11	**DBL**	0	1	BLUE STRETCH SWITCH		00								
	12	**GBL**	0	1	BLUE STRETCH GAIN SELECTION		00								
	13	**SBL**	0	1	BLUE STRETCH SIZE SELECTION		00								
	14	**CDS**	1	1	COLOR DEPENDENT SHARPNESS	PICTURE MODE					01	01	00	01	
	15	**CST**	7	7	THRESHOLD OF COLOR DEPENDENT SHARPNESS		07								
	16	**CTI**	0	1	COLOR TRANSIENT IMPROVEMENT	PICTURE MODE					00	00	00	00	
	17	**BON**	0	1	BLACK OFFSET COMPENSATION	PICTURE MODE					00	00	00	00	
	18	**BTD**	0	3F	ADAPTIVE BLACK STRETCH	PICTURE MODE					00	00	00	00	
	19	**NLD**	15	3F	NON-LINEARITY AMPLIFIER	PICTURE MODE AND MULTIPLE MODE		00			15	15	00	15	
	1A	**NLW**	7	7	STEP WIDTH OF NON-LINEARITY AMPLIFIER		07								
	1B	**VGD**	15	3F	VARIABLE GAMMA	PICTURE MODE AND MULTIPLE MODE		1F			1F	1F	1F	1F	
	1C	**VGW**	0	7	STEP WIDTH OF VARIABLE GAMMA		00								
	1D	**PKD**	3F	3F	PEAKING AMPLITUDE	PICTURE MODE					3F	30	0E	30	
	1E	**PKW**	8	0F	STEP WIDTH OF PEAKING AMPLITUDE		08								
	1F	**SPD**	0	3F	STEPNESS CORRECTION	PICTURE MODE					00	00	00	00	
	20	**CRD**	11	3F	CORING LEVEL	PICTURE MODE					16	16	00	16	
	21	**CRW**	9	0F	STEP WIDTH OF CORING LEVEL		09								
	22	**CRO**	0	0F	CORING LEVEL OFFSET FOR VIDEO MODE		01								
	23	**LWD**	1F	3F	LINE WIDTH CORRECTION		1F								
	24	**SNM**	0	7	S/N MODE UNDER UNREALIBLE S/N CONDITION		00								
	25	**SNC**	3	0F	S/N RATIO AVERAGE COUNTER	TV/Video			03	03					
	26	**FMC**	2	0F	FEATURE MODE MATCHING COUNTER		02								

Adjustment Item Table

TVG	Functionality		Function	50						60						Device Name
Category	No.	Name		Single DRC 1250	Single DRC Progressive	PinP	TWIN	INDEX	Single DRC 100	Single DRC 1250	Single DRC Progressive	PinP	TWIN	INDEX	Single DRC 100	
MID	00	HPH	HORIZONTAL ACTIVE DISPLAY AREA PHASE	52	52	52	92	8D	52	52	52	52	7E	78	52	MB94918
	01	VPH	VERTICAL ACTIVE DISPLAY AREA PHASE	20	20	20	2A	26	12	25	25	25	2E	2D	14	
	02	HSZ	HORIZONTAL ACTIVE DISPLAY AREA SIZE	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	
	03	VSZ	VERTICAL ACTIVE DISPLAY AREA SIZE	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	
	04	HPW	DISPLAY H-SYNC PLUS WIDTH	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	
	05	VPW	DISPLAY V-SYNC PLUS WIDTH	03	03	03	03	03	03	03	03	03	03	03	03	
	06	YDL	DISPAY OUTPUT Y/C DELAY CORRECTION	00	00	00	00	00	00	00	00	00	00	00	00	
	07	MHP	MAIN PICTURE HORIZONTAL POSITION (SINGLE & PINP)	7F	7F	7F			7F	7F	7F	7F			7F	
	08	MVP	MAIN PICTURE VERTICAL POSITION (SINGLE & PINP)	7F	7F	7F			7F	7F	7F	7F			7F	
	09	MHS	MAIN PICTURE HORIZONTAL SIZE (SINGLE & PINP)	7F	7F	7F			7F	7F	7F	7F			7F	
	0A	MVS	MAIN PICTURE VERTICAL SIZE (SINGLE & PINP)	7F	7F	7F			7F	7F	7F	7F			7F	
	0B	PHP	PINP SUB PICTURE HORIZONTAL POSITION			6B						53				
	0C	PVP	PINP SUB PICTURE VERTICAL POSITION			5E						57				
	0D	PHS	PINP SUB PICTURE HORIZONTAL SIZE			7F						7F				
	0E	PVS	PINP SUB PICTURE VERTICAL SIZE			7F						7F				
	0F	PHO	PINP SUB PICTURE HORIZONTAL POSITION OFFSET			76						68				
	10	PVO	PINP SUB PICTURE VERTICAL POSITION OFFSET			6E						6B				
	11	TMP	TWIN MAIN PICTURE HORIZONTAL POSITION				00						00			
	12	TSP	TWIN SUB PICTURE HORIZONTAL POSITION				01						01			
	13	TVP	TWIN MAIN & SUB PICTURE VERTICAL POSITION			00	00	00				00	00	00		
	14	THS	TWIN MAIN & SUB PICTURE HORIZONTAL SIZE			00	00	00				00	00	00		
	15	TVS	TWIN MAIN & SUB PICTURE VERTICAL SIZE	00	00	00	00	00	00	00	00	00	00	00	00	
	16	THO	TWIN MAIN & SUB PICTURE HORIZONTAL POSITION OFFSET													
	17	TVO	TWIN MAIN & SUB PICTURE VERTICAL POSITION OFFSET													
	18	XHS	INDEX SUB PICTURE HORIZONTAL SIZE													
	19	XVS	INDEX SUB PICTURE VERTICAL SIZE													
	1A	XHG	INDEX HORIZONTAL GAP WIDTH BETWEEN PICTURES													
	1B	XVG	INDEX VERTICAL GAP WIDTH BETWEEN PICTURES													
	1C	XHP	INDEX 1ST SUB PICTURES HORIZONTAL POSITION													
	1D	XVP	INDEX 1ST SUB PICTURES VERTICAL POSITION													
	1E	DHP	DRC HORIZONTAL ACTIVE AREA POSITION	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	
	1F	DHS	DRC HORIZONTAL ACTIVE PIXEL SIZE	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	
	20	DVP	DRC VERTICAL ACTIVE AREA LINE POSITION	1A	1A	1A	3F	3F	1A	1A	1A	1A	39	39	1A	
	21	DVS	DRC VERTICAL ACTIVE AREA LINE SIZE	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	7F	
	22	VHP	VDO HORIZONTAL ACTIVE AREA POSITION			7F	7F	7F				7F	7F	7F		
	23	VHS	VDO HORIZONTAL ACTIVE PIXEL SIZE			7F	7F	7F				7F	7F	7F		
	24	VEP	VDO VERTICAL ACTIVE AREA EVEN POSITION			1E	1E	1E				1B	1B	1B		
	25	VVS	VDO VERTICAL ACTIVE AREA LINE SIZE			7F	7F	7F				7F	7F	7F		
	26	VOP	VDO VERTICAL ACTIVE AREA ODD POSITION			00	00	00				00	00	00		
	27	CLT	VDO CLAMP PULSE OUTPUT TIMING			7F	7F	7F				7F	7F	7F		
	28	CLW	VDO CLAMP PULSE WIDTH			04	04	04				04	04	04		
	29	VYD	VDO ANALOG INPUT Y/C DELAY CORRECTION			00	00	00				00	00	00		
	2A	VCR	VDO CROMA SIGNAL ORDER			01	01	01				01	01	01		
	2B	VDI	VDO DIGITAL ANALOG INPUT SELECTION			00	00	00				00	00	00		

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	Common			NR MODE				PICTURE TUBE				Device Name
Category	No.	Name						TV	Video	NRmode0	NRmode1	NRmode2	NRmode3	Dynamic	Standard/ Drama	Hi-Fine/ Soft	Personal	
3CM	00	**FRZ**	0	1	EXTERNAL MEMORY TEST BIT		00											UPD64082
	01	**NRM**	0	3	NOISE REDUCTION OPERATION MODE													
	02	**YCO**	0E	0F	Y/C SIGNAL OUTPUT SELECTION		0D											
	03	**SYC**	1	3	SYSTEM CLOCK SELECTION		01											
	04	**STD**	0	3	STANDARD/NON-STANDARD OPERATION SELECTION		00											
	05	**MSS**	0	3	INTER-FRAME/INTER-LINE OPERATION SELECTION		00											
	06	**KIL**	3	3	KILLER/NON-KILLER OPERATION SELECTION		03											
	07	**EAD**	0	1	EXTERNAL Y-ADC SWITCH		00											
	08	**ECS**	1	3	EXTERNAL C-SYNC INPUT SELECTION		01											
	09	**CPP**	2	3	ADC INPUT LEVEL & CLUMP PULSE WIDTH SELECTION		02											
	0A	**PWR**	0	1	ADC INPUT WIDTH SWITCH		00											
	0B	**HDP**	5	7	HORIZONTAL PHASE ADJUSTMENT		05											
	0C	**CDL**	4	7	C-SIGNAL ADJUSTMENT		04											
	0D	**DYC**	2	0F	DY DETECTION CORING LEVEL ADJUSTMENT	NR MODE (0-3)				02	02	02	04					
	0E	**DYG**	0A	0F	DY DETECTION GAIN ADJUSTMENT	NR MODE (0-3)				0A	0A	0A	0A					
	0F	**DCC**	5	0F	DC DETECTION CORING LEVEL ADJUSTMENT	NR MODE (0-3)				05	03	03	05					
	10	**DCG**	5	0F	DC DETECTION GAIN ADJUSTMENT	NR MODE (0-3)				05	0A	0A	05					
	11	**YNR**	1	0F	YNR NON-LINEAR FILTER SETUP		01											
	12	**CNR**	1	0F	CNR NON-LINEAR FILTER SETUP		01											
	13	**WSC**	1	3	NOISE DETECTION CORING ADJUSTMENT		01											
	14	**VTH**	1	3	HYSTERESIS SELECTION FOR H-SYNC NON-STANDARD	TV/Video		01	01									
	15	**VTR**	1	3	SENSITIVITY SELECTION FOR H-SYNC NON-STANDARD	TV/Video		01	01									
	16	**LDR**	2	3	SENSITIVITY SELECTION FOR FRAME-SYNC NON STANDARD	TV/Video		02	02									
	17	**VAP**	3	7	GAIN ADJUSTMENT FOR VERTICAL SHAPE CORRECTION	PICTURE MODE								03	00	00	00	
	18	**VAI**	0C	1F	VANISHING ADJUSTMENT FOR VERTICAL SHAPE CORRECTION	PICTURE MODE								0C	00	00	00	
	19	**TST**	0	1	TEST BIT		00											
	1A	**YPF**	3	3	CENTER FREQUENCY SELECTION FOR Y-PEAKING BPF	PICTURE MODE								03	03	03	03	
	1B	**YPG**	8	0F	GAIN ADJUSTMENT FOR Y-PEAKING BPF	PICTURE MOD								0A	08	08	08	
	1C	**VSE**	0A	0F	LINE COMB FILTER SETUP		0A											
	1D	**CCN**	0	1	C-SIGNAL SPLIT FILTER SETUP		00											
	1E	**COS**	0	1	C-SIGNAL DELAY SWITCH AT NOISE REDUCTION		00											
	1F	**SDC**	0	1	DC DETECTION SENSITIVITY SWITCH		00											
	20	**SDY**	1	1	DY DETECTION LOWER-LEVER SENSITIVITY SWITCH		01											
	21	**D2G**	4	7	D2 GAIN SELECTION		04											
	22	**YHC**	0	3	Y-SIGNAL HIGHER-LEVEL CORING SELECTION	PICTURE MOD	00							00	00	00	00	
	23	**YHG**	0	1	Y-SIGNAL HIGHER-LEVEL GAIN SWITCH	PICTURE MOD	00							00	00	00	00	
	24	**SHT**	0	0F	NON-STANDARD DETECTION & H/V COUNTER TEST BITS		00											
	25	**CLK**	8	0F	CLOCK TEST BIT		08											
	26	**PLL**	0D	0F	PLL FILTER SETUP		0D											
	27	**KRF**	3	0F	KILLER DETECTION REFERENCE ADJUSTMENT		03											
	28	**HSL**	0C	0F	H-SYNC SLICE LEVEL ADJUSTMENT		0C											
	29	**VSL**	8	0F	V-SYNC SLICE LEVEL ADJUSTMENT		08											
	2A	**BPS**	4	0F	INTERNAL BURST GATE START POSITION ADJUSTMENT		04											
	2B	**BPW**	0A	0F	INTERNAL BURST GATE WIDTH ADJUSTMENT		0A											
	2C	**ADC**	3	3	ADC CLOCK DELAY SELECTION		03											
	2D	**APD**	1	1	ADC POWER-DOWN SWITCH		01											
	2E	**NSD**	1	1	NON-STANDARD DETECTION TEST BIT		01											
	2F	**SPD**	2	3	MEMORY POWER-DOWN SWITCH		02											
	30	**CNT**	0	1	CNR TEST BIT		00											

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note	VIDEO PICTURE MODE				TV PICTURE MODE				Device Name
							Dynamic	Standard 00	Hi-Fine/ Soft	Personal	Dynamic	Standard/ Drama	Hi-Fine/ Soft	Personal	
Category	No.	Name													
2CM	00	**APA**	1	1	2D COMB APACON ON/OFF	PICTURE MODE	01	00	00	00	00	00	00	00	CXA2069Q

TVG	Functionality		Initial	Range	Function	Table and Note	Common	Initial Value (Detailed)								Device Name
								Sur VDD	Sur VDP	Sur TRS	Sur SIM	Sur Off	Dynamic	Standard/ Drama	Hi-Fine/ Soft	Personal	
Category	No.	Name															
DSP	00	**DUL**	0	3	DIP UNLOCK DETECTION MODE		00										TC9446F
	01	**DIM**	3	3	DIGITAL INPUT MODE		03										
	02	**TFM**	5A	7F	TRUSURROUND FRONT MINUS	VDD/VDP		5A	5A								
	03	**TFP**	12	7F	TRUSURROUND FRONT PLUS	VDD/VDP		12	12								
	04	**TCE**	40	7F	TRUSURROUND CENTER	VDD/VDP		40	40								
	05	**TS1**	20	FF	TRUSURROUND SURROUND #1	VDD/VDP		20	EO								
	06	**TS2**	20	7F	TRUSURROUND SURROUND #2	VDD/VDP		20	20								
	07	**TSP**	7B	7F	TRUSURROUND SURROUND PLUS	VDD/VDP		68	68								
	08	**TSM**	7B	7F	TRUSURROUND SURROUND MINUS	VDD/VDP		68	68								
	09	**LFE**	5A	7F	LOW FREQUENCY EFFECT		5A										
	0A	**BHL**	40	7F	BBE EFFECT 1 FOR BBE HIGH	VDD/VDP/TRS/SIM/OFF		33	33	33	28	40					
	0B	**BHH**	48	7F	BBE EFFECT 2 FOR BBE HIGH	VDD/VDP/TRS/SIM/OFF		33	33	33	28	40					
	0C	**BLL**	33	7F	BBE EFFECT 1 FOR BBE LOW	VDD/VDP/TRS/SIM/OFF		2B	2B	2B	24	33					
	0D	**BLH**	33	7F	BBE EFFECT 2 FOR BBE LOW	VDD/VDP/TRS/SIM/OFF		2B	2B	2B	24	33					
	0E	**DLR**	1	7	DELAY SELECTION AT DSP RESET		07										
	0F	**BBE**	1	3	BBE SELECTION	EXCEPT PERSONAL							01	01	03		

TVG	Functionality		Initial	Range	Function	**50**	**60**	Common	Device Name
Category	No.	Name							
TXT	00	TXH	4B	3F	TELETEXT HORIZONTAL POSITION FOR PHILIPS			4B	SAA5261
	01	TXV	0E	3F	TELETEXT VERTICAL POSITION FOR PHILIPS			0E	

Adjustment Item Table

TVG	Functionality		Initial	Range	Function	Table and Note		Initial Value (Detailed)		Device Name
Category	No.	Name					Common	50	60	
OPM	00	OSH	12	3F	OSD H POSITION		12			CXP750096
	01	FW1	0	3F	OSD ODD/EVEN FIELD WINDOW SETUP #1		00			
	02	FW2	3	3F	OSD ODD/EVEN FIELD WINDOW SETUP #2		03			
	03	OHO	9	0F	OSD H Position Offset for INDEX		05			
	04	IL1	1C	3F	INDEX SUB-SCREEN OSD 1st LINE VERTICAL POSITION	50/60Hz		25	22	
	05	IVO	2F	3F	INDEX SUB-SCREEN OSD VERTICAL POSITION	50/60Hz		2B	20	
	06	**COM**	0	03	COMB OPERATION SELECTION		00			
	07	**APC**	1	1	APC SWITCH		01			
	08	**TSY**	0	03	TV SYSTEM SELECTION UNDER SEARCHING WITH AUTO TV SYSTEM		00			
	09	**MUT**	0	1	NO SIGNAL MUTE		00			
	0A	**AFM**	1	1	AUTO FM SWITCH		01			
	0B	TVO	3	7	V-ANGLE CORRECTION TO PICTURE ROTATION		03			
	0C	DBL	0	1	DISABLE BLUEBACK FUNCTION		01			
	0D	**SSO**	1	3	SPEED CH SEARCH SELECTION		01			
	0E	TRP	0	3F	MPEG/JPEG NOISE REDUCTION FOR EACH INPUT		00			
	0F	SCH	1	7F	CH SELECTION FOR SHIPPING CONDITION	NTSC	7F			
	10	SCA	1	1	CABLE/AIR SELECTION FOR SHIPPING CONDITION	NTSC	01			
	11	DMG	0	1	DISABLE MENU-OPERATION GUIDE		00			
	12	VSN	0	1	ENABLE NOISE REDUCTION IN VIDEO MODE		00			
	13	RUC	0F	0F	RF SIGNAL CHANGE COUNTER AFTER UNLOCKED	Disabled if set to OFH	04			
	14	RLC	0F	0F	RF SIGNAL CHANGE COUNTER AFTER LOCKED	Disabled if set to OFH	01			

TVG	Functionality		Initial	Range	Function	Common	Device Name
Category	No.	Name					
OPB	00	OP1	E7	FF	OPTION BIT 1 (SEE THE SPECIFIED SHEET)	6F	option-bit
	01	OP2	13	FF	OPTION BIT 2 (SEE THE SPECIFIED SHEET)	13	

Abbreviation:

FF = ?????
R4 = DRC1250
PR = Preset PIP
4P = R4 or PR
VC = V-Compressed Mode
NC = Non-compressed Mode
ECO = Eco Mode
VC = V-Compressed Mode
NC = Non-Compressed Mode
Sur = Surround
VDD = Virtual Dolby Digital
VDP = Virtual Dolby Prologic
TRS = Tru Surround
SIM = Simulated

NOTE

- shaded items are fixed data.
- no data
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data: Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory.
  In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

OPTION NOTE

COM Comb Operation Selection — 00 = automatic operation (depends on color system status), 01 = no comb operation, 02 = forced 2D-comb operation, 03 = forced 3D-comb operation

TSY TV System Selection for Auto TV System — 00 = B/G, 01 = I, 10 = D/K, 11 = M

SSO Speed CH Search Selection — 00 = normal, 01 = 4 times, 10 = 6 times, 11 = 8 times

TRP MPEG/JPEG Noise Reduction

Input	–	–	TV	Video 1	Video 2	Video 3	Video 4	DVD

OP1 Items

Item	TOP	NICAM	HDEV	Reserved	Progressive	DVD Input	AV Input		HEX
KV-ES38M31	1	1	1	0	1	1	1	1	EF
KV-ES38M61	0	1	1	0	1	1	1	1	6F
KV-ES38M90	0	1	1	0	1	1	1	1	6F
KV-ES38M91	0	1	1	0	1	1	1	1	6F

DRC 3 Mode — DRC - MF3 Mode — 1 = 3 Mode (ES38)
AV Input — 00 = no AV Input — 01 = 1 AV Input — 10 = 3 AV Input — 11 = 4 AV Input

OP2 Items

Item	C-Text	Korea Stereo	Korea Mode	A-TV SYS	USST	SSV-Model	OSD Language	HEX
KV-ES38M31	0	0	0	1	0	0	11	13
KV-ES38M61	0	0	0	1	0	0	11	13
KV-ES38M90	0	0	0	1	0	0	11	13
KV-ES38M91	0	0	0	1	0	0	11	13

A-TV sys — Auto TV System in Auto Program — 0 = Disabled, 1 = Enabled
SSV Model — SSV = Production Model — 0 = Original, 1 = Disable PIP/ TWIN/ Digital-IN
OSD Language — 00 = English only, 01 = English & Chinese, 10 = English & Arabic 11 = English, Chinese & Arabic

NOTE

No.	Modes	Details	Entry Conditions
1.	50NC/60NC	Signal 50/60Hz Non-Compressed mode.	Input 50Hz(PAL)/60Hz(NTSC), wide mode OFF (TV/ video mode)
2.	50VC/60VC	Signal 50/60Hz V-Compressed mode.	Input 50Hz(PAL)/60Hz(NTSC), wide mode ON (TV/ Video mode)
3.	ECO ON/OFF NC	Eco modeON/OFF Non-Compressed mode.	ECO mode ON/OFF, wide mode OFF
4.	ECO ON/OFF VC	ECO mode ON/OFF V-Compressed mode.	ECO mode ON/OFF, wide mode ON
5.	50/60 DVD	Signal 50/60Hz Digital Video Disk	Input 50Hz(PAL)/60Hz(NTSC), DVD
6.	Multi Comb	Multi Comb Filter	Input PAL, NTSC 3.58, Service mode category OPM 03 COM 01 (Multi Model only)
7.	3D Comb	3 Dimensional Comb Filter	Input NTSC 3.58 only, Service mode category OPM 03 COM 02 (NTSC model only)
8.	S-Input	S-Video Input	Connect S-Video Cable, video mode

6-3. PICTURE QUALITY ADJUSTMENTS

H-TRAPIZIUM ADJUSTMENT

1. Input a cross hatch/dot signal.
2. Adjust DAC 4 HTR to make H-Trapizoid distortion best.

SUB CONTRAST, SUB HUE, SUB COLOR

Adjustment condition

SAJ	00	PIC	3F
	06	DYC	0
	0E	CLO	6
	10	HUO	7
	13	PIO	0
JGL	04	BBT	0
	05	LML	3

PICTURE QUALITY : HI-FINE
ECO MODE : OFF
WIDE MODE : OFF
DRC-MF : DRC1250

INPUT SIGNAL
Video Color Bar (White and Color 75%)
RF Color Bar (White and Color 75%)

MEASUREMENT POINT

VR ; R100 (the pin 6 of CN1100 at A board)
VB ; B100 (the pin 7 of CN1100 at A board)

CAUTION
After the above Adjustment, these adjustment parameters must be recovered to the original condition.

Original condition

SAJ	00	PIC 28 HI-FINE
SAJ	06	DYC 0 HI-FINE

	50 TV	50 VIDEO	60 TV	60 VIDEO
OE CLO	9	8	6	6
10 HUO	8	8	9	9

13	PIO	TWIN = 3
JGL	04	BBT 3
	05	LML 0

1. NTSC VIDEO IN PUT

Input signal ; NTSC color bar, 75% to Video 1.
[TWIN] mode, [Service] mode.

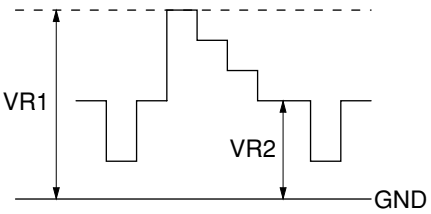
(i) SUB CONTRAST

Condition :

SAJ	00	PIC	3F
	02	COL	0
JGL	01	RGB	4
SAJ	13	PIO	0

Adjusting parameter:

LEFT	;	YCT	08	YOL
RIGHT	;	SYC	08	YOL



VR1 - VR2 = VR = 1.85 ± 0.07 (Vp-p)

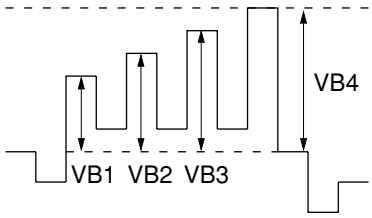
(ii) SUB HUE/SUB COL

Condition :

SAJ	02	COL	1F
JGL	01	RGB	7
SAJ	10	HUO	7

Adjusting parameter:

LEFT	;	YCT	0A	COL
		YCT	00	TNT
RIGHT	;	SYC	0A	COL
		SYC	00	TNT



VB1 = VB4 ± 70 mV
VB2 = VB3 ± 70 mV

2. NTSC RF INPUT

Input signal ; NTSC RF color bar, 75%.
[TWIN] mode, [Service] mode.

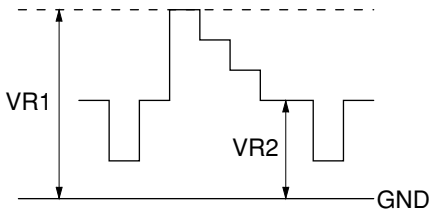
(i) SUB CONTRAST

Condition :

SAJ	00	PIC	3F
	02	COL	0
JGL	01	RGB	4

Adjusting parameter:

LEFT	;	YCT	04	SCT
RIGHT	;	SYC	04	SCT



VR1 - VR2 = VR = 1.85 ± 0.07 (Vp-p)

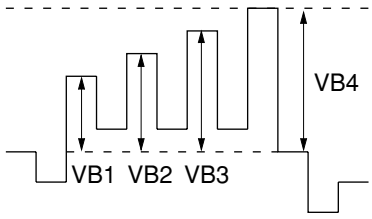
(ii) SUB HUE/SUB COL

Condition :

SAJ	02	COL	1F
JGL	01	RGB	7
SAJ	10	HUO	7

Adjusting parameter:

LEFT	;	YCT	03	SCL
		YCT	00	TNT
RIGHT	;	SYC	03	SCL
		SYC	00	TNT



VB1 = VB4 ± 70 mV
VB2 = VB3 ± 70 mV

3. PAL RF INPUT

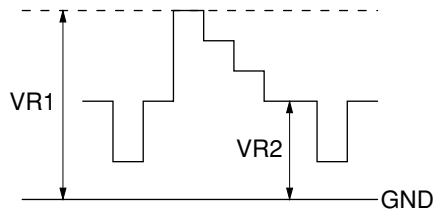
Input signal ; PAL RF color bar, 75%.
[TWIN] mode, [Service] mode.

(i) SUB CONTRAST

Condition : SAJ 00 PIC 3F
SAJ 02 COL 0
JGL 01 RGB 4

Adjusting parameter:

LEFT ; YCT 04 SCT
RIGHT ; SYC 04 SCT



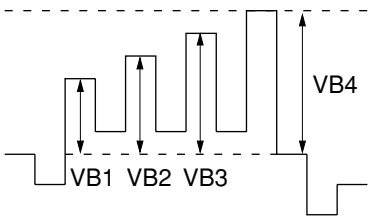
VR1 - VR2 = VR = 1.85 ± 0.07 (Vp-p)

(ii) SUB HUE/SUB COL

Condition : SAJ 02 COL 1F
JGL 01 RGB 7

Adjusting parameter:

LEFT ; YCT 03 SCL
RIGHT ; SYC 03 SCL



VB2 = VB3 = VB4 = ± 70 mV

6-4. DEFLECTION ADJUSTMENTS

FOR DRC 1250(50Hz) MODE

1. Set to Service Mode.
2. Input a Pal cross hatch/dot signal.
3. Set the following condition.
   Picture Mode to [DYNAMIC], Picture Rotation to [+/– 0] and Eco Mode to OFF.
4. Set to DRC 1250 mode.
5. Using the [1] and [4] buttons select category GEO (Service Mode).
6. Raise/lower the data with the [3] and [6] buttons. Select and adjust the following items to obtain optimum image.

GEO:	00	VSZ	V SIZE
	01	VPS	V POSITION
	02	VLN	V LINEARITY
	03	SCO	S CORRECTION
	04	HSZ	H SIZE
	05	HPS	H POSITION
	06	PAP	PIN AMP
	07	UPN	UPPER CORNER PIN
	08	LPN	LOWER CORNER PIN
	09	TRZ	TRAPEZIUM
	0A	AGL	AFC ANGLE
	0B	BOW	AFC BOW

7. Using the [1] and [4] buttons select category DAC (Service Mode).
8. Select and adjust the following items to obtain optimum image. Raise/lower the data with the [3] and [6] buttons. Select and adjust the following item to obtain optimum image.

GEO:	03	CCP	LOWER CORNER PIN
	04	HTR	HORIZONTAL TRAPEZIUM

9. Select “GEO 04 HSZ” with the [1] and [4] buttons.
10. Confirm the H Size condition. If necessary, adjust the H SIZE to get a best condition.
11. Write into the memory by pressing [MUTING] then [0] on the remote commander.

FOR DRC100(50Hz) MODE

12. Change the DRC-MF to DRC100 and then adjust the following items.
    Service Item

GEO:	00	VSZ	V SIZE
	01	VPS	V POSITION
	02	VLN	V LINEARITY
	03	SCO	S CORRECTION
	04	HSZ	H SIZE
	05	HPS	H POSITION
	06	PAP	PIN AMP
	07	UPN	UPPER CORNER PIN
	08	LPN	LOWER CORNER PIN
	09	TRZ	TRAPEZIUM
	0A	AGL	AFC ANGLE
	0B	BOW	AFC BOW

13. Repeat step 5 and 6.

FOR PIP(50Hz) MODE

14. Change to PIP mode. (PIP: ON) and then adjust the following items.
    Service Item

GEO:	00	VSZ	V SIZE
	01	VPS	V POSITION
	02	VLN	V LINEARITY
	03	SCO	S CORRECTION
	04	HSZ	H SIZE
	05	HPS	H POSITION
	06	PAP	PIN AMP
	07	UPN	UPPER CORNER PIN
	08	LPN	LOWER CORNER PIN
	09	TRZ	TRAPEZIUM
	0A	AGL	AFC ANGLE
	0B	BOW	AFC BOW
DAC	01	HLN	H LINEARITY
	02	MDP	MIDDLE PIN
	03	CCP	LOWER CORNER PIN
	04	HTR	HORIZONTAL TRAPEZIUM

15. Repeat step 5, 6 and 8.

FOR TWIN(50Hz) MODE

16. Change to TWIN mode (TWIN: ON)
17. Copy “GEO 00 VSZ, 04 HSZ, 05 HPS (PIP 50Hz)” “GEO 00 VSZ, 01 VPS, 04 HSZ, 05 HPS (TWIN 50Hz)”
18. Adjust “ GEO 09 TRZ”.

FOR PROGRAM INDEX(50Hz) MODE

19. Change to PROGRAM INDEX MODE.
20. Write “GEO 00 VSZ (INDEX 50Hz)” as “GEO 00 VSZ (PIP 50Hz)” - 4 step.
21. Copy “GEO 01 VPS, 04 HSZ, 05 HPS (PIP 50Hz)” to “GEO 01 VPS, 04 HSZ, 05 HPS (INDEX 50Hz)”.
22. Adjust “GEO 09 TRZ”.

FOR WIDE MODE DRC1250(50Hz)

23. Change to VIDEO MODE.
24. Change to DRC-MF: DRC1250, WIDE MODE: ON
25. Adjust the following item.
    Service Item

GEO:	00	VSZ	V SIZE
	01	VPS	V POSITION
	02	VLN	V LINEARITY
	03	SCO	S CORRECTION
	04	HSZ	H SIZE
	05	HPS	H POSITION
	06	PAP	PIN AMP
	07	UPN	UPPER CORNER PIN
	08	LPN	LOWER CORNER PIN
	09	TRZ	TRAPEZIUM
	0A	AGL	AFC ANGLE
	0B	BOW	AFC BOW
DAC	01	HLN	H LINEARITY
	02	MDP	MIDDLE PIN
	03	CCP	LOWER CORNER PIN
	04	HTR	HORIZONTAL TRAPEZIUM

26. Repeat step 5, 6 and 8.

FOR WIDE MODE, DRC100(50Hz)

27. Change to VIDEO MODE.
28. Change to DRC-MF: DRC100, WIDE: ON
29. Adjust the following item.
    Service Item

GEO:	00	VSZ	V SIZE
	01	VPS	V POSITION
	02	VLN	V LINEARITY
	03	SCO	S CORRECTION
	04	HSZ	H SIZE
	05	HPS	H POSITION
	06	PAP	PIN AMP
	07	UPN	UPPER CORNER PIN
	08	LPN	LOWER CORNER PIN
	09	TRZ	TRAPEZIUM
	0A	AGL	AFC ANGLE
	0B	BOW	AFC BOW
DAC	01	HLN	H LINEARITY
	02	MDP	MIDDLE PIN
	03	CCP	LOWER CORNER PIN
	04	HTR	HORIZONTAL TRAPEZIUM

FOR WIDE MODE, PIP(50Hz)

30. Change to VIDEO MODE.
31. Change to PIP: ON, WIDE MODE: ON
32. Adjust all items listed in number no.29.
33. Repeat step 5, 6 and 8.

FOR DRC1250(60Hz) MODE

34. Input 525/60Hz signal. Change to DRC-MF: DRC1250.
35. Copy “DAC 00 HCT (DRC1250, 50Hz)” to
    “DAC 00 HCT (DRC1250, 60Hz)”.
36. Adjust the following items.

    Service Item

GEO:	00	VSZ	V SIZE
	01	VPS	V POSITION
	02	VLN	V LINEARITY
	03	SCO	S CORRECTION
	04	HSZ	H SIZE
	05	HPS	H POSITION
	06	PAP	PIN AMP
	07	UPN	UPPER CORNER PIN
	08	LPN	LOWER CORNER PIN
	09	TRZ	TRAPEZIUM
	0A	AGL	AFC VANGLE
	0B	BOW	AFC BOW
DAC	01	HLN	H LINEARITY
	02	MDP	MIDDLE PIN
	03	CCP	LOWER CORNER PIN
	04	HTR	HORIZONTAL TRAPEZIUM

37. Repeat step 5, 6 and 8.

FOR DRC100(60Hz) MODE

38. Change to DRC-MF: DRC100 and then adjust the items listed in no.36.

FOR PIP(60Hz) MODE

39. Change to PIP mode (PIP: ON) and then adjust the items listed in no.36.
40. Repeat step 5, 6 and 8.

FOR TWIN(60Hz) MODE

41. Change to TWIN: ON
42. Copy “GEO 00 VSZ, 04 HSZ, 05 HPS (PIP 60Hz)” to
    “GEO 00 VSZ, 01 VPS, 04 HSZ, 05 HPS (TWIN 60Hz)”
43. Adjust “ GEO 09 TRZ”.

FOR PROGRAM INDEX(60Hz) MODE

43. Change to PROGRAM INDEX MODE.
44. Copy “GEO 00 VSZ, 04 HSZ, 05 HPS (PIP 60Hz)” to
    “GEO 00 VSZ, 01 VPS, 04 HSZ, 05 HPS (TWIN 60Hz)”
45. Adjust “ GEO 09 TRZ”.
46. Repeat step 5, 6 and 8.

FOR WIDE MODE, DRC1250(60Hz)

47. Change to VIDEO MODE: Input 525/60Hz singal.
48. Change to DRC-MF: DRC1250, WIDE MODE: ON
49. Adjust the items listed in no.36.

FOR WIDE MODE, DRC100(60Hz)

50. Change the VIDEO MODE: Input 525/60Hz signal.
51. Change to DRC-MF: DRC100, WIDE MODE: ON.
52. Adjust the items listed in no.36 and repeat step 5, 6 and 8.

FOR WIDE MODE, PIP(60Hz)

53. Change the VIDEO MODE: Input 525/60Hz signal.
54. Change to PIP: ON, WIDE MODE: ON.
55. Adjust the items listed in no.36 and repeat step 5, 6 and 8.

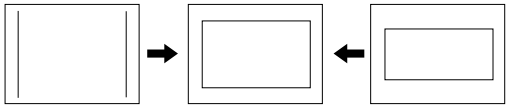
6-5. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons 5 and 0 (Data Initialize), and 2 and 0 (Data Copy) to initialize the data.
3. Call each item number and check if the respective screen shows the normal picture.
   In cases where items are not well adjusted, rectify the items with fine adjustment.
4. Select item numbers “OPB00” (OP1), “OPB01” (OP2) and respectively set the bit per model with command buttons 3 and 6.
5. Press commander buttons 8 and 0 (Test Normal) to return to the data that was set on the shipment from the factory. (This will also cancel Service Mode).

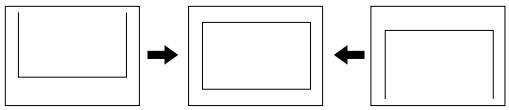
6-6. PICTURE DISTORTION ADJUSTMENT (1)

Item Number 00 – 0B

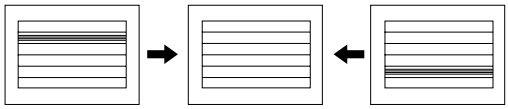
GEO 0 VSZ (V SIZE)



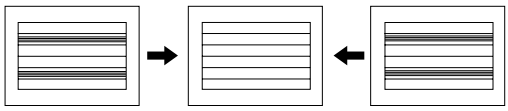
GEO 1 VPS (V POSITION)



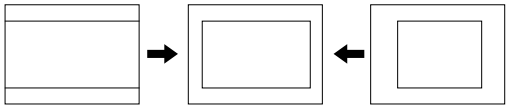
GEO 2 VLN (V LINEARITY)



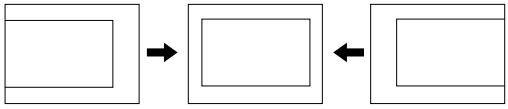
GEO 3 SCO (VERTICAL S-Correction)



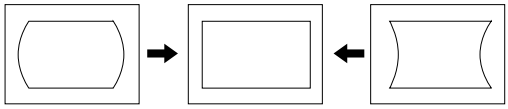
GEO 4 HSZ (H SIZE)



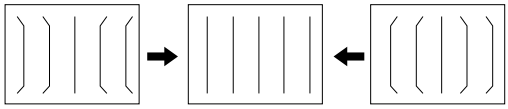
GEO 5 HPS (H POSITION)



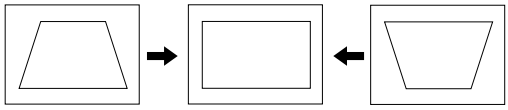
GEO 6 PAP (PIN AMP)



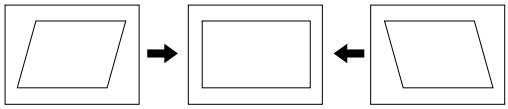
GEO 07 UPN (UPPER CORNER PIN)
GEO 08 LPN (LOWER CORNER PIN)



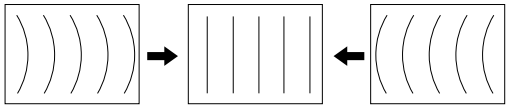
GEO 9 TRZ (TRAPEZIUM)



GEO 0A AGL (AFC.ANGLE)

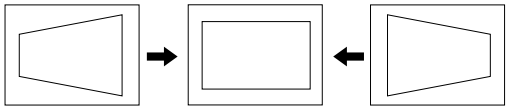


GEO 0B BOW (AFC.BOW)



PICTURE DISTORTION ADJUSTMENT (2)

H-TRAPEZOID (DAC 4 HTR)



MEMO

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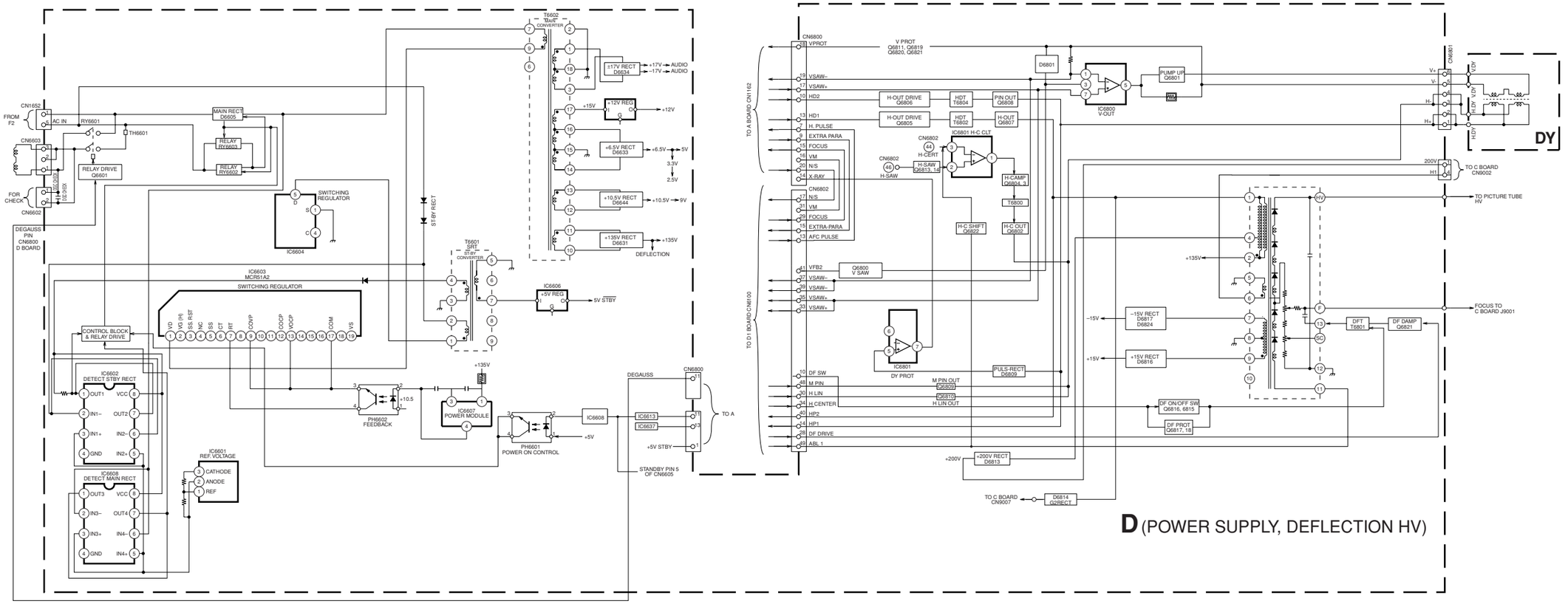
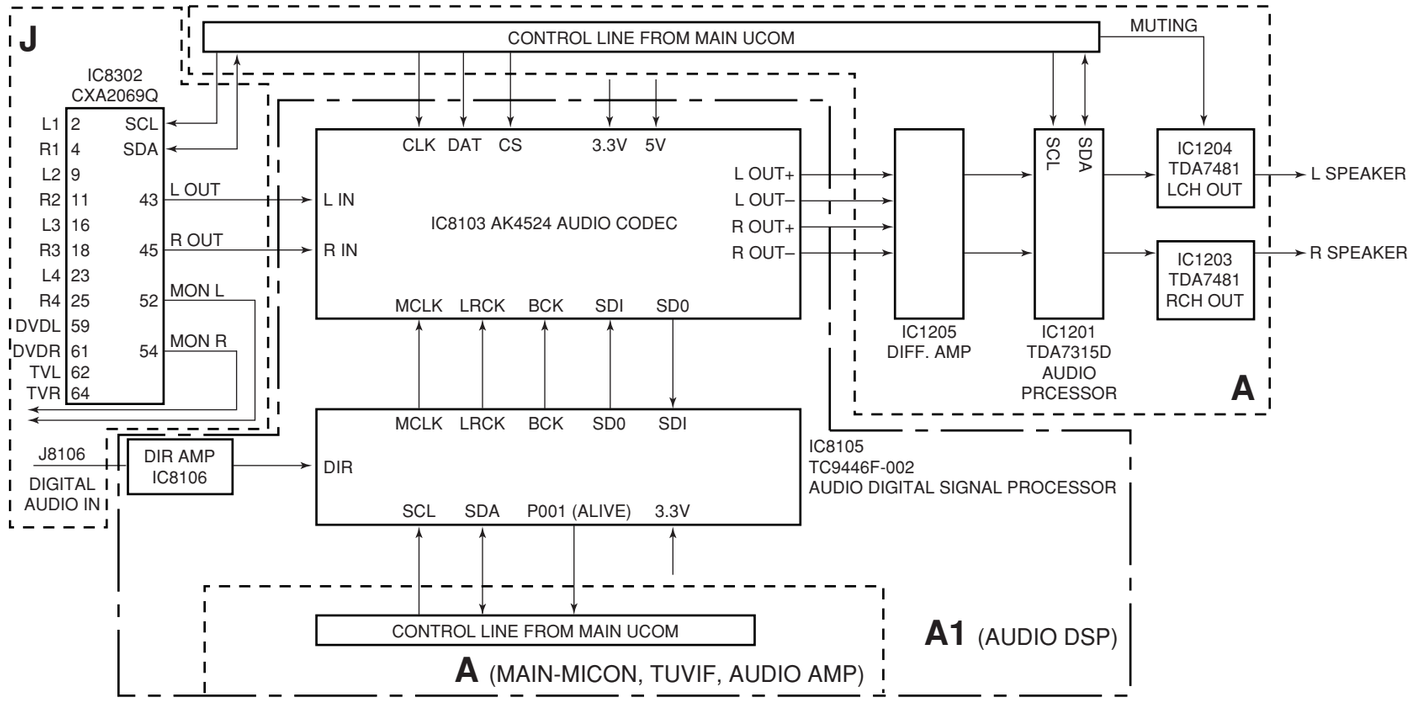
SECTION 7
DIAGRAMS

7-1. BLOCK DIAGRAM





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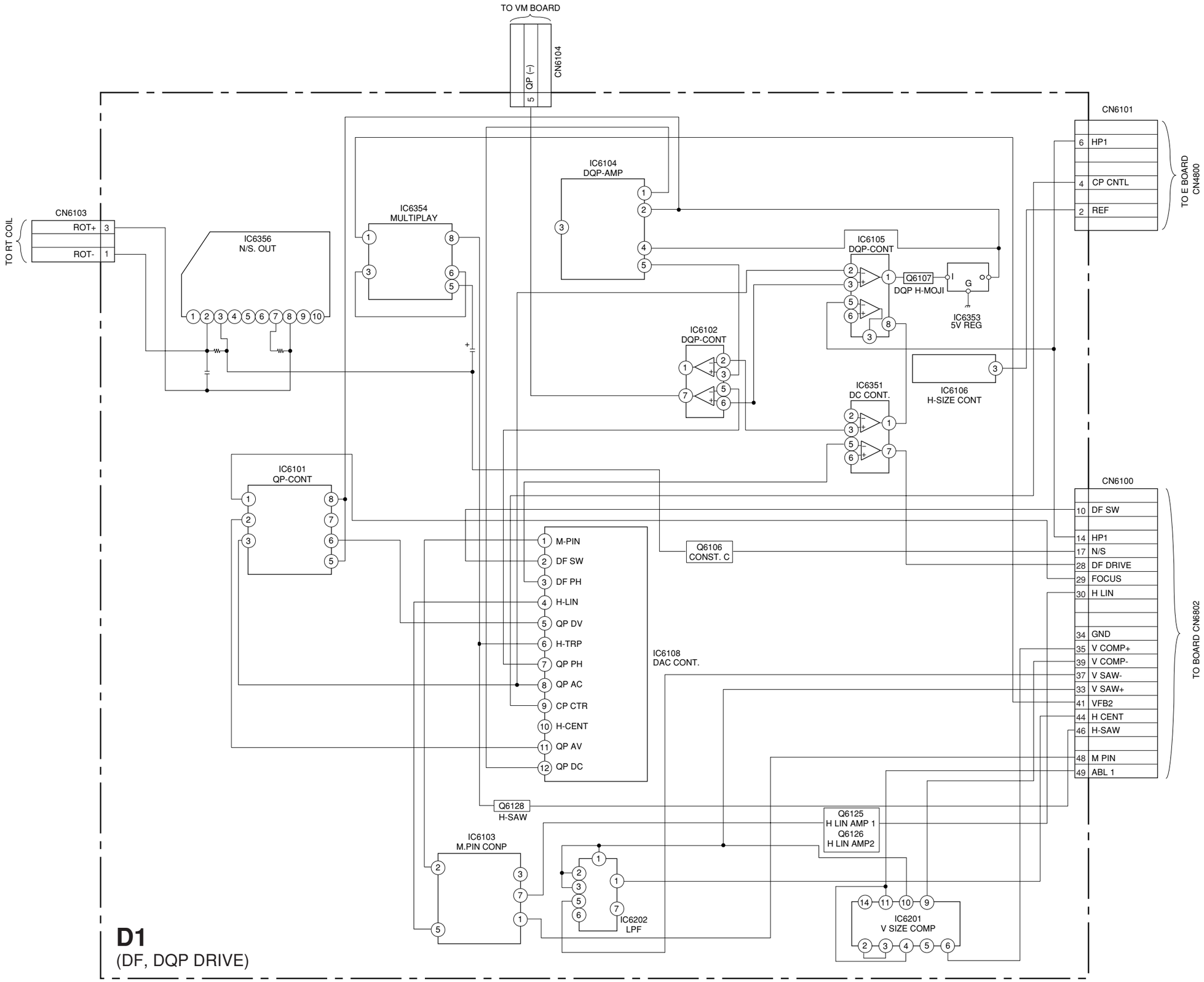

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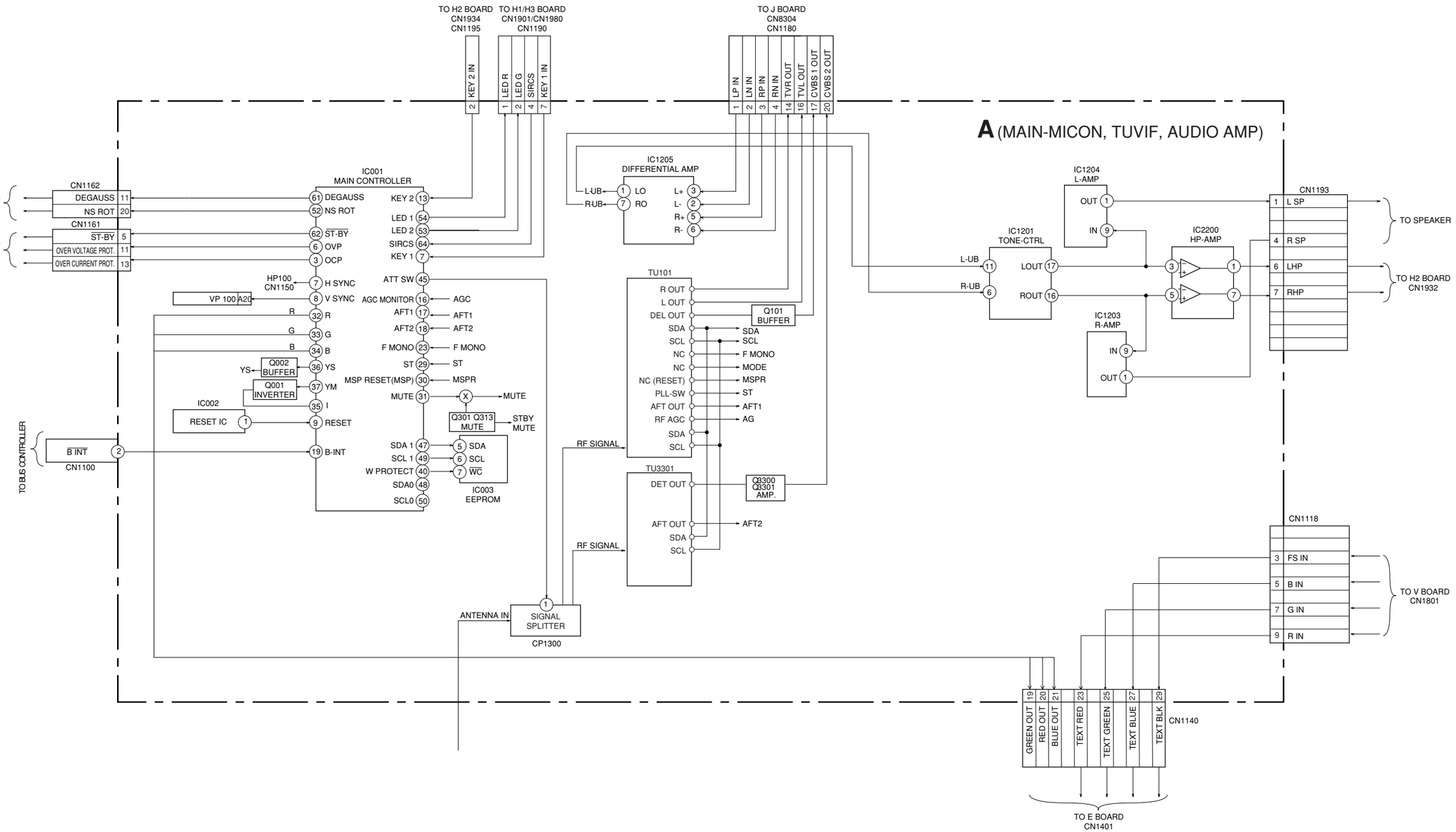

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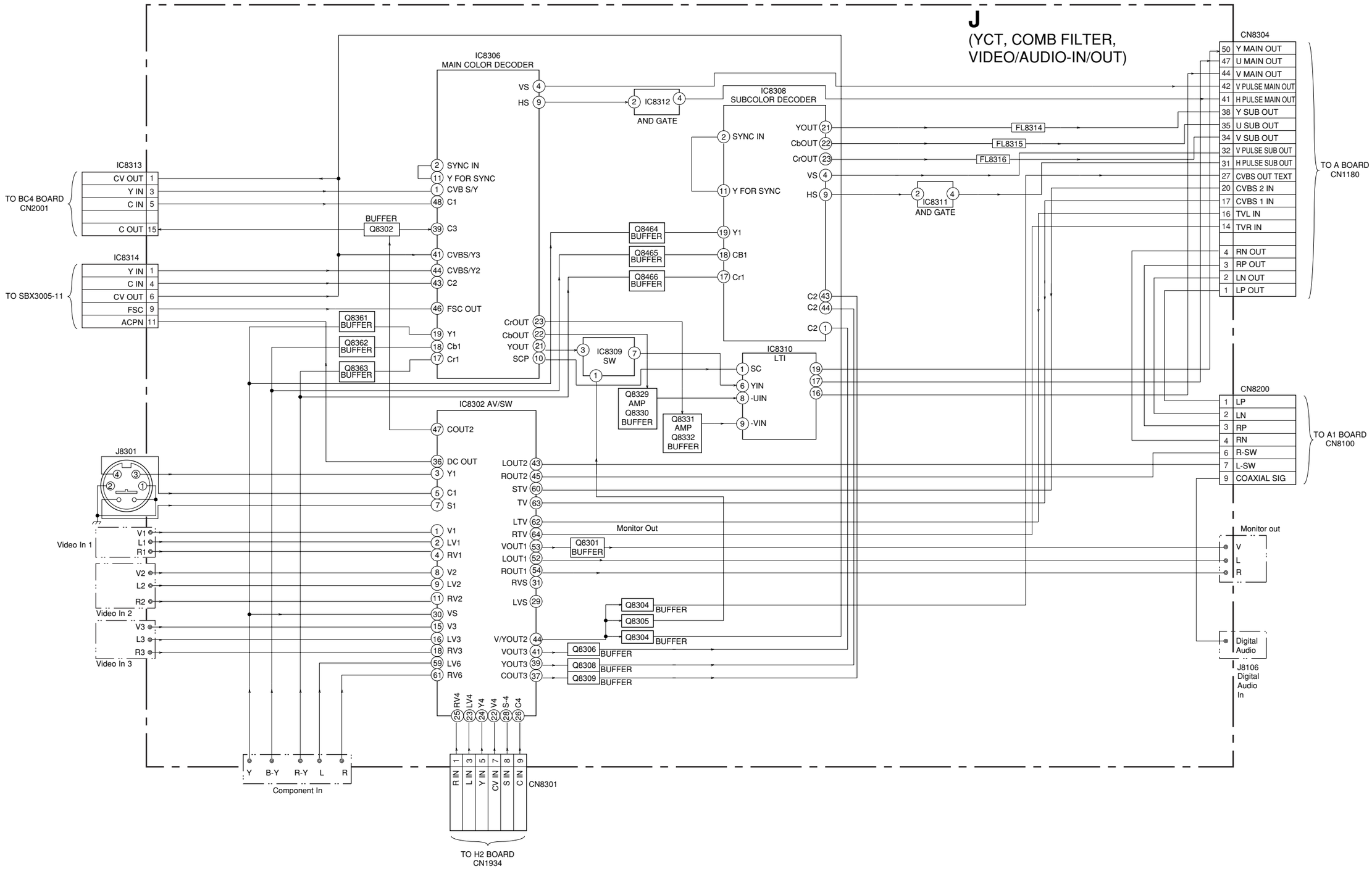
J
(YCT, COMB FILTER, VIDEO/AUDIO-IN/OUT)



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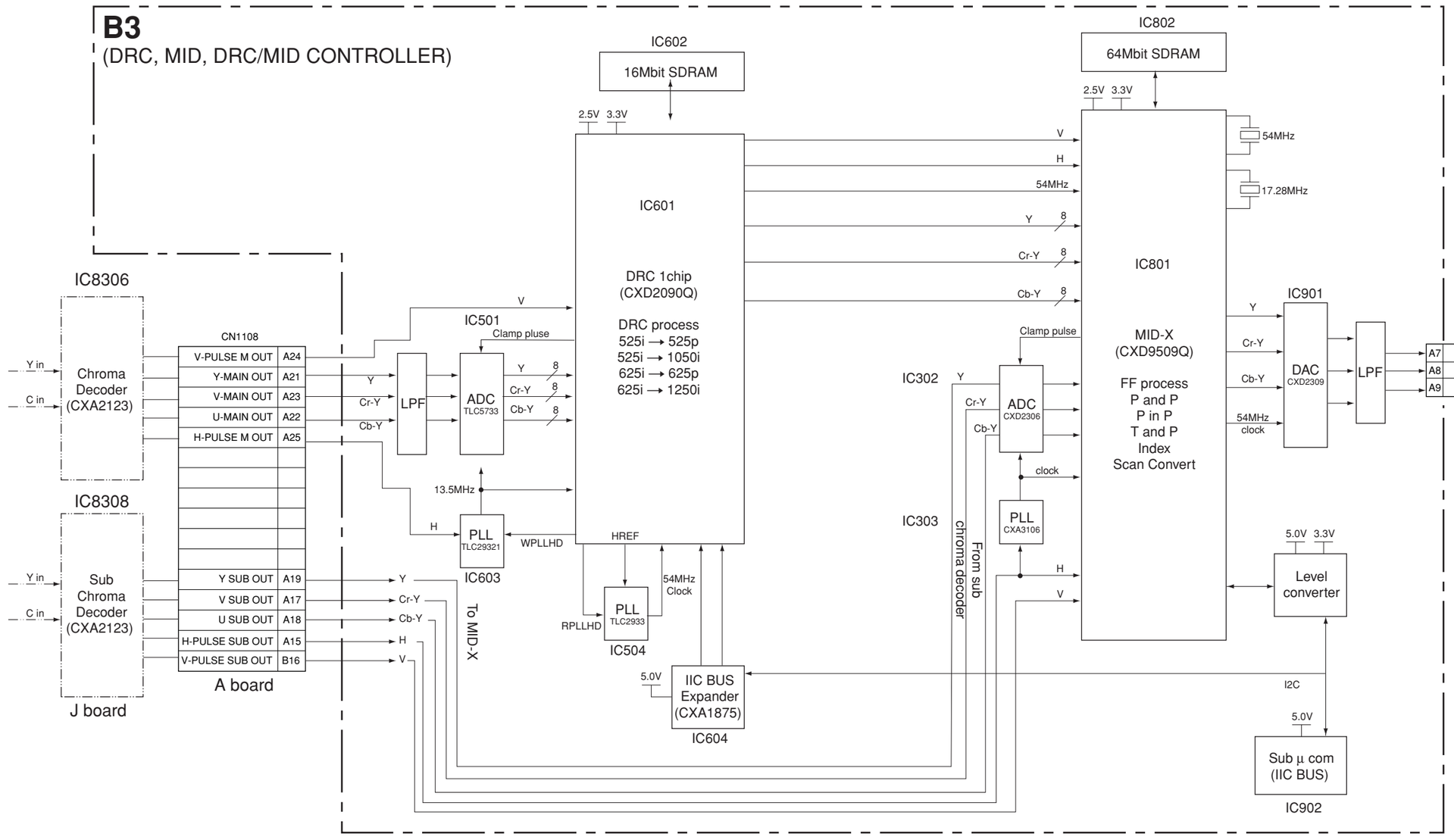

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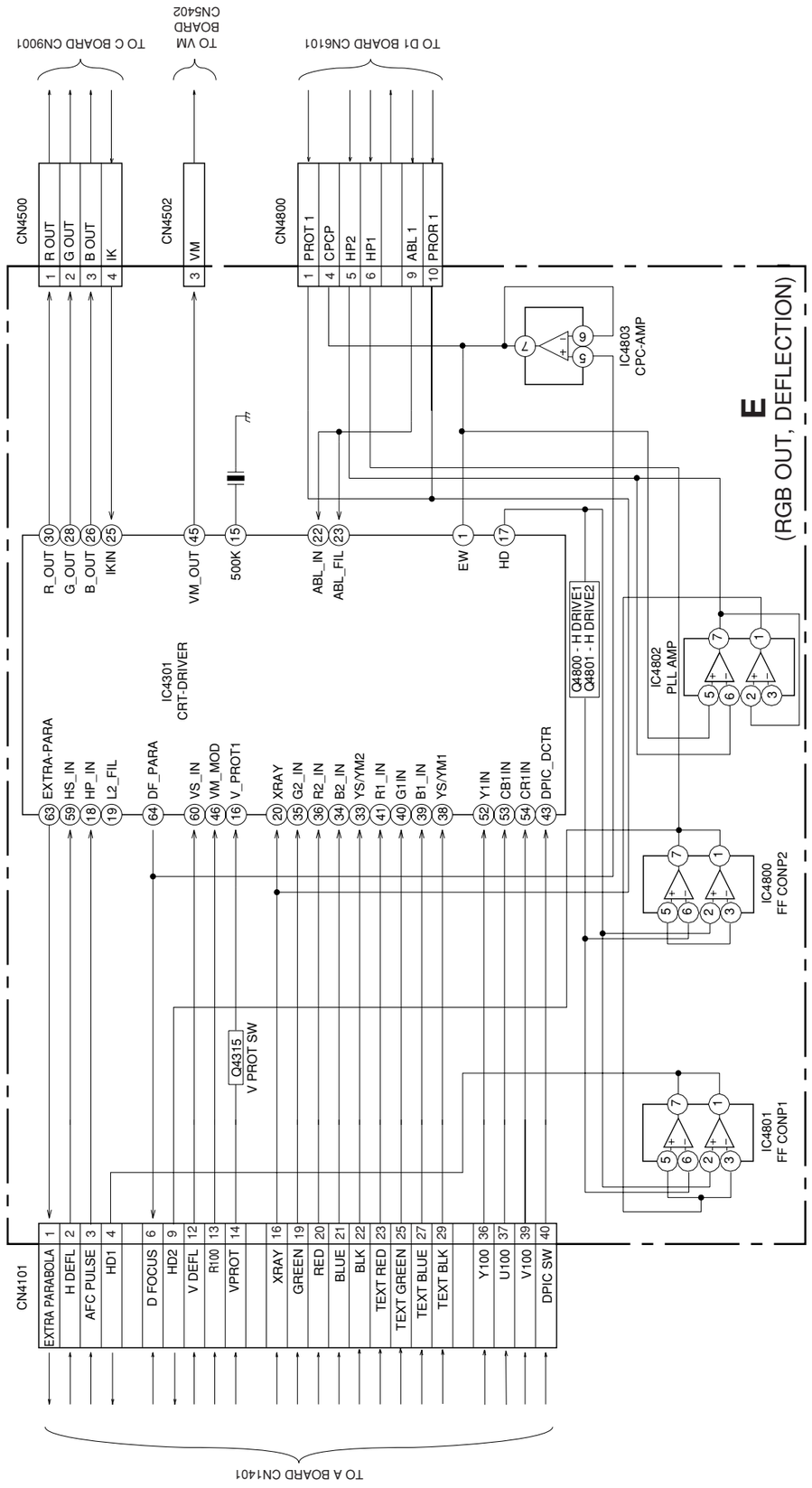

7-2. SCHEMATIC DIAGRAM

Note:

- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance which does not have rating electrical power is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)

- : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation or adjustment for rrepair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
  no mark : Common
  underline : PAL
  ( ) : SECAM
  [ ] : NTSC 3.58
  << >> : NTSC 4.43
- **Readings are taken with a 10 MΩ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in Volt.**
- ✻ **: Cannot be measured.**
- **Circled numbers are waveform references.**
- **: B +bus.**
- **: B –bus.**
- **: signal path.**

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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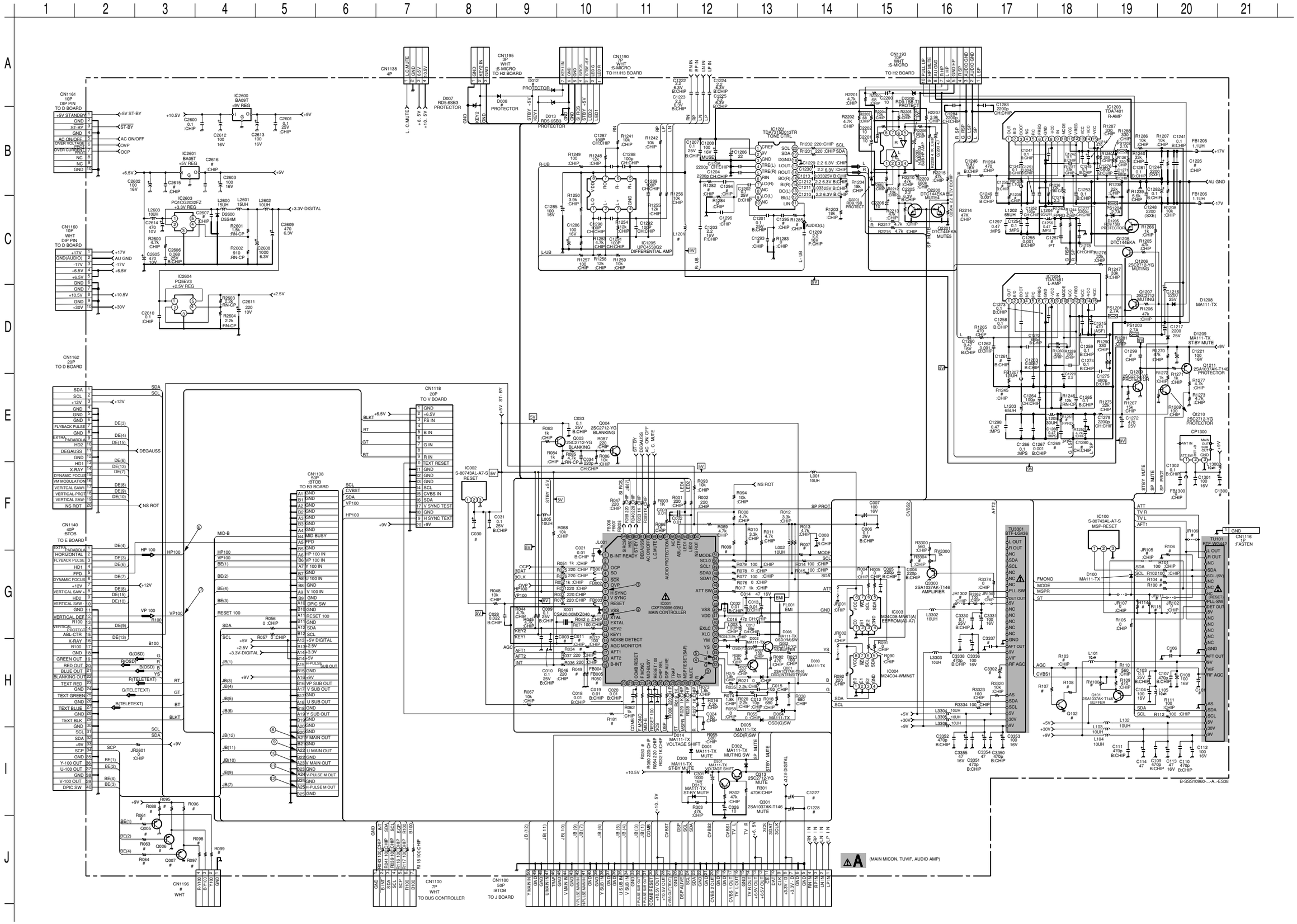
(1) Schematic Diagram of A Board


CN1161 10P DIP PIN TO D BOARD
CN1160 10P WHT DIP PIN TO D BOARD
CN1162 20P TO D BOARD
CN1140 40P :BTOB TO E BOARD
CN1138 4P
CN1195 5P WHT -S-MICRO TO H2 BOARD
CN1190 6P WHT -S-MICRO TO H1/H3 BOARD
CN1193 10P WHT -S-MICRO TO H2 BOARD
CN1118 20P TO V BOARD
CN1108 50P :BTOB TO B3 BOARD
CN1196 # WHT
CN1100 7P WHT TO BUS CONTROLLER
CN1180 50P :BTOB TO J BOARD
CN1116 1P :FASTEN
IC1201 TDA7535D013TR TONE CTRL
IC1205 UPC4558G2 DIFFERENTIAL AMP
IC2600 BA09T +9V REG
IC2601 BA05T +5V REG
IC2603 PQ1CG2032FZ +3.3V REG
IC2604 PQ5EV3 +2.5V REG
IC1203 TDA7481 R-AMP
IC1204 TDA7481 L-AMP
IC1002 S-80743AL-A7-S RESET
IC1001 CXP750096-035Q MAIN CONTROLLER
IC1100 S-80743AL-A7-S MSP-RESET
IC1003 M24C08-MN6T(A) EEPROM(A0-A7)
IC1004 M24C04-WMN6T
TU1101 BTF-WG44J2
TU3301 BTF-LG436
D012 PROTECTOR
D007 RD5.6SB3 PROTECTOR
D008 # PROTECTOR
D013 RD5.6SB3 PROTECTOR
D2201 RD9.1SB PROTECT
D2205 RD9.1SB PROTECT
D1205 RD9.1SB PROTECT
D1206 RD9.1SB PROTECT
D2200 DTC144EKA MUTE4
D2201 DTC144EKA MUTE5
Q2200 DTC144EKA MUTES
Q1205 DTC144EKA
Q1206 2SC2712-YG MUTING
Q1207 2SC2712 MUTING
Q1211 2SA1037AK-T146 PROTECTOR
Q1212 2SC2712-YG PROTECTOR
Q1213 2SC2712-YG PROTECTOR
Q1210 2SC2712-YG PROTECTOR
Q1214 2SA1037AK-T146 BUFFER
Q1215 2SA1037AK-T146 BUFFER
Q1211 2SA1037AK-T146 PROTECTOR
Q3300 2SA1037AK-T146 AMPLIFIER
Q004 2SC2712-YG BLANKING
Q003 2SC2712-YG BLANKING
Q313 2SC2712-YG MUTE
Q301 2SA1037AK-T146 MUTE
Q001 MA111-TX MUTE
Q002 MA111-TX OSD/BLEEDER
Q005 # Q006 # Q007 #
D1208 MA111-TX
D1209 MA111-TX ST-BY MUTE
D300 MA111-TX ST-BY MUTE
D301 MA111-TX VOLTAGE SHIFT
D302 MA111-TX MUTING SW
D1001 MA111-TX VOLTAGE SHIFT
D1002 MA111-TX ST-BY MUTE
D1003 MA111-TX
D1004 MA111-TX
D1005 MA111-TX OSD(R)SW
D1006 MA111-TX OSD/YM/SW
D1007 MA111-TX OSD(G)SW
D1008 MA111-TX OSD/INTENSITY SW
D1014 MA111-TX VOLTAGE SHIFT
CP1300
PS1201 2.7A
PS1203 2.7A
PS1204 2.7A
FB1205 1.1UH
FB1206 1.1UH
FB1300
L1001 10UH
L1002 10UH
L1003 10UH
L1004 10UH
L1005 10UH
L1006 10UH
L1201 #
L1202 65UH
L1203 65UH
L1204 65UH
L3302 10UH
L3303 10UH
L3304 10UH
L3305 10UH
L101 10uH
L102 10UH
L103 10UH
L104 10UH
L105 10UH
Qt1210 2SC2712-YG PROTECTOR
RV3300 1K
RV1001 10K
JR1001 #
JR1002 #
JR1003 #
JR1004 #
JR1005 #
JR1006 #
JR1007 #
JR1008 #
JR1009 #
JR1010 #
JR1011 #
JR1012 #
JR1013 #
JR1014 #
JR1015 #
JR1016 #
JR1017 #
JR1018 #
JR1019 #
JR1020 #

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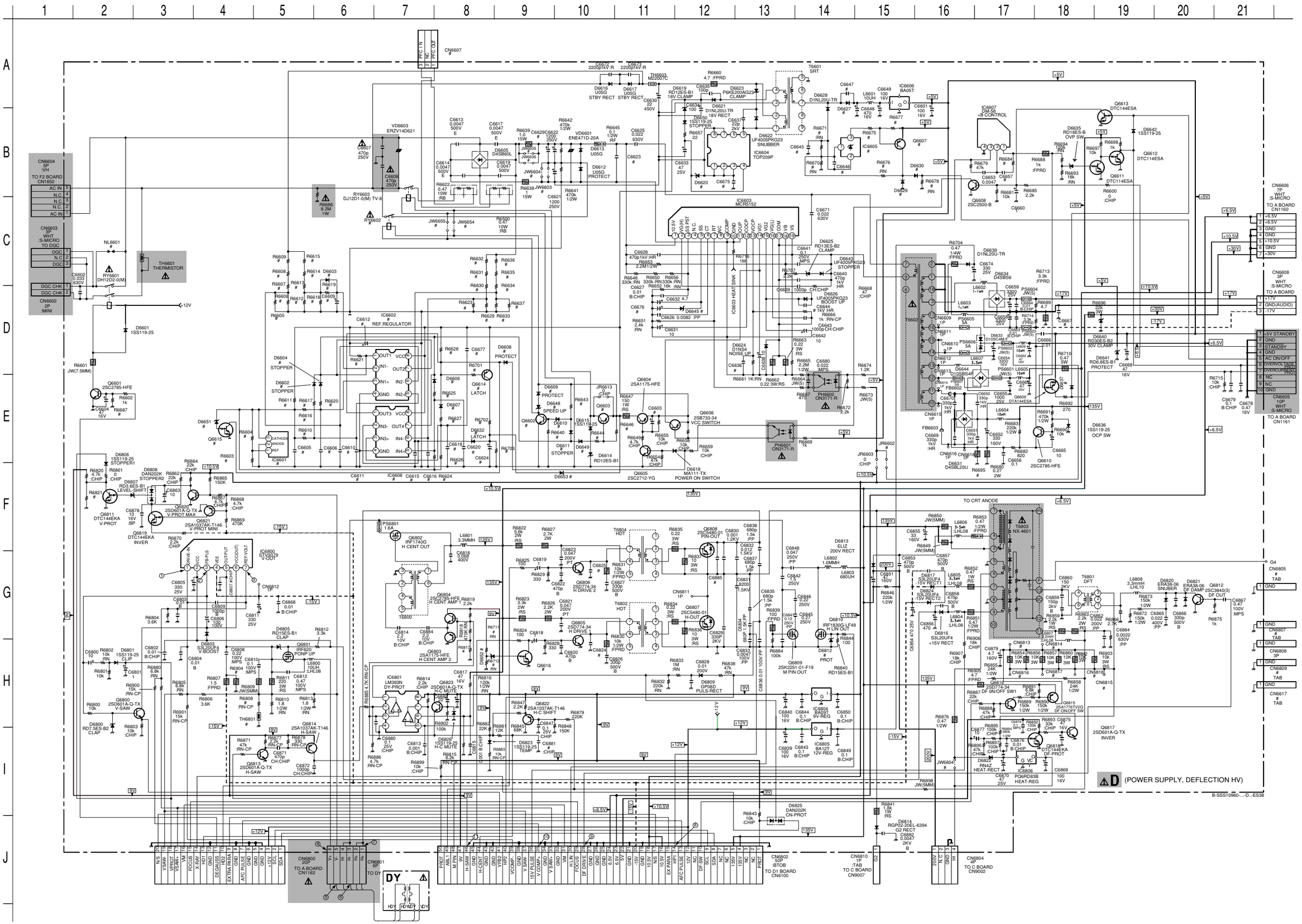
(2) Schematic Diagram of D Board


CN6607
CN6604 5P :VH TO F2 BOARD CN1652
CN6603 3P :WHT :S-MICRO TO DGC
CN6602 2P :MINI
IC6603 MCR5152
IC6604 TOP209P
IC6605 PH6601 ON3171-R
IC6606 BA05T
IC6607 QM-56 +B CONTROL
IC6602 REF.REGULATOR
IC6601
IC6608
IC6609 PH6602 ON3171-R
IC6800 STV9379 V-OUT
IC6801 LM393N DY-PROT
IC6804 PH6604 ON3171-R
IC6805 BA12T 12V-REG
IC6806 PQ6RD83B HEAT-REG
CN6606 7P WHT :S-MICRO TO A BOARD CN1160
CN6608 3P WHT :S-MICRO TO A BOARD
CN6605 10P WHT :S-MICRO TO A BOARD CN1161
CN6812
CN6802 50P :BTOB TO D1 BOARD CN6100
CN6800 20P TO A BOARD CN1162
CN6801 6P TO DY
CN6810 1P :TAB TO C BOARD CN9007
CN6804 4P TO C BOARD CN9002
T6801 DFT
T6802 HDT
T6803 NX-4601
T6804 HDT
TH6601 THERMISTOR
TH6801
PS6801 1.6A
PS6604 JW(5)
PS6605 5A
PS6606 5A
PS6607 3.5A
PS6608 5A
PS6609 3.5A
PS6610 5A
PS6611 3.5A
PS6612 5A
PS6613 3.5A
PS6614 3.5A
PS6615 3.5A
PS6616 3.5A
PS6617 3.5A
PS6618 3.5A
PS6619 3.5A
PS6620 3.5A
PS6621 3.5A
PS6622 3.5A
PS6623 3.5A
PS6624 3.5A
PS6625 3.5A
PS6626 3.5A
PS6627 3.5A
PS6628 3.5A
PS6629 3.5A
PS6630 3.5A
PS6631 3.5A
PS6632 3.5A

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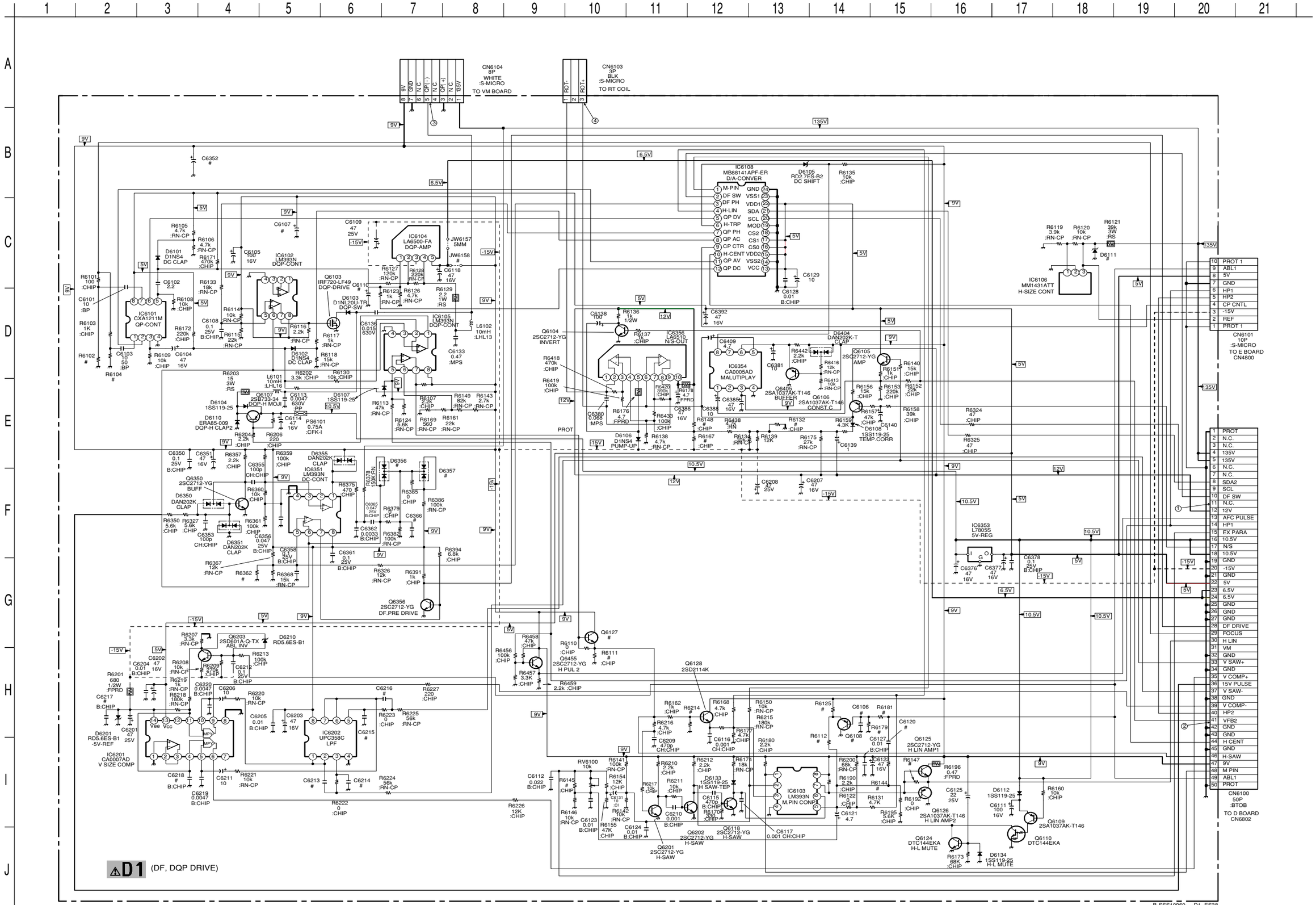
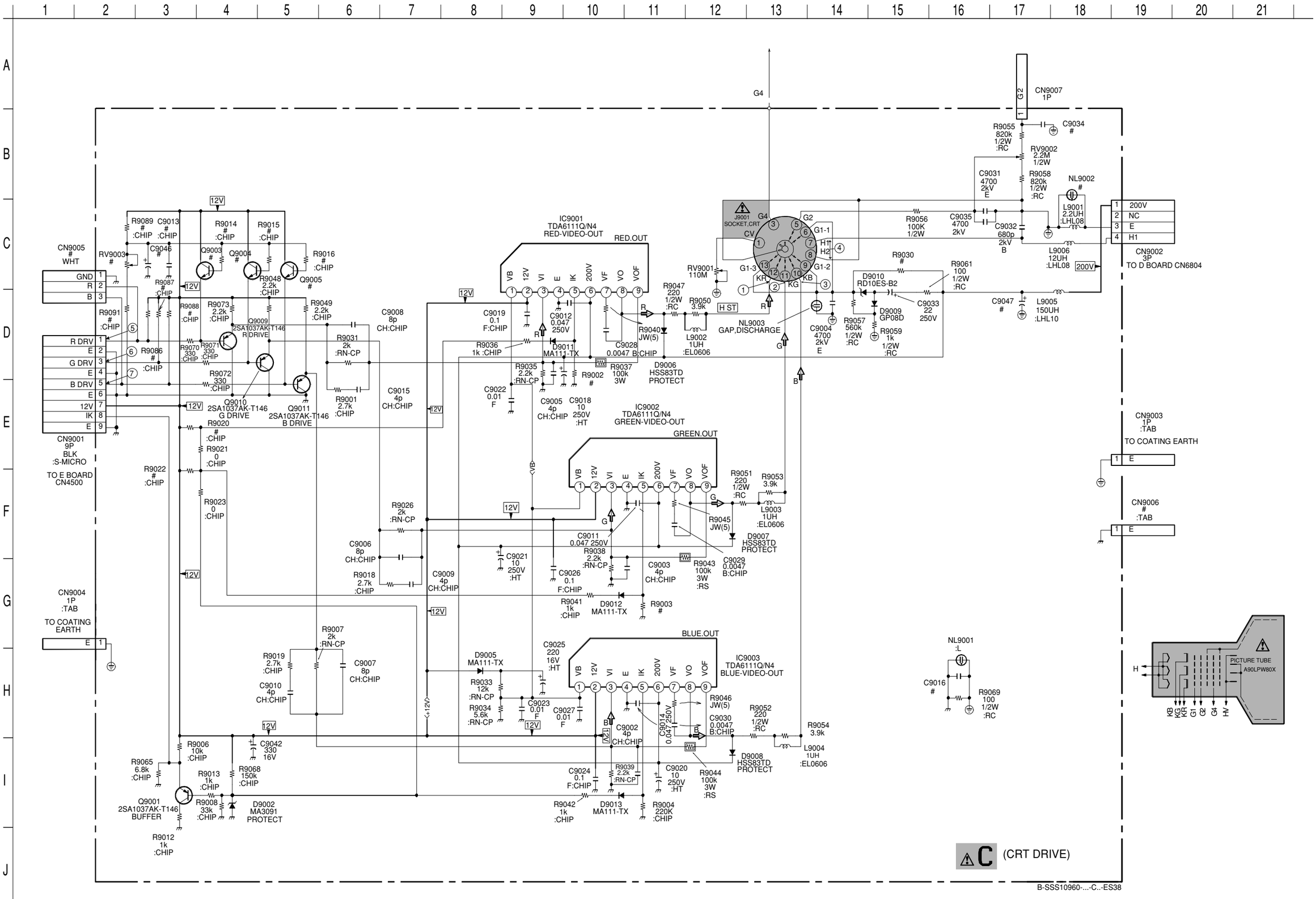
(3) Schematic Diagram of D1 Board


CN6104 8P WHITE :S-MICRO TO VM BOARD
9V
GND
N.C.
OP(-)
N.C.
OP(+)
N.C.
35V
CN6103 3P BLK :S-MICRO TO RT COIL
ROT-
ROT+
IC6108 MB88141APF-ER D/A-CONVER
D6105 RD2.7ES-B2 DC SHIFT
R6135 10k :CHIP
IC6104 LA6500-FA DQP-AMP
IC6102 LM393N DQP-CONT
IC6105 LM393N DQP-CONT
IC6106 MM1431ATT H-SIZE CONT
IC6353 L7805S 5V-REG
IC6354 CA0005AD MALUTIPLAY
IC6356 LA6510 N/S-OUT
IC6103 LM393N M.PIN CONT
IC6202 UPC358C LPF
IC6201 CA0007AD V SIZE COMP
IC6101 CXA1211M QP-CONT
Q6103 IRF720-LF49 DQP-DRIVE
Q6104 2SC2712-YG INVERT
Q6105 2SC2712-YG AMP
Q6106 2SA1037AK-T146 CONST.C
Q6107 2SB733-34 DQP-H MOJI
Q6108 2SA1037AK-T146 BUFFER
Q6109 2SA1037AK-T146
Q6110 DTC144EKA
Q6124 DTC144EKA H-L MUTE
Q6125 2SC2712-YG H LIN AMP1
Q6126 2SA1037AK-T146 H LIN AMP2
Q6127 #
Q6128 2SD2114K
Q6350 2SC2712-YG BUFF
Q6351 DAN202K CLAP
Q6355 DAN202K CLAP
Q6356 2SC2712-YG DF.PRE DRIVE
Q6358 DAN202K CLAP
Q6359 DAN202K CLAP
Q6360 DAN202K CLAP
Q6361 DAN202K CLAP
Q6362 DAN202K CLAP
Q6363 DAN202K CLAP
Q6364 DAN202K CLAP
Q6365 DAN202K CLAP
Q6366 DAN202K CLAP
Q6367 DAN202K CLAP
Q6368 DAN202K CLAP
Q6369 DAN202K CLAP
Q6370 DAN202K CLAP

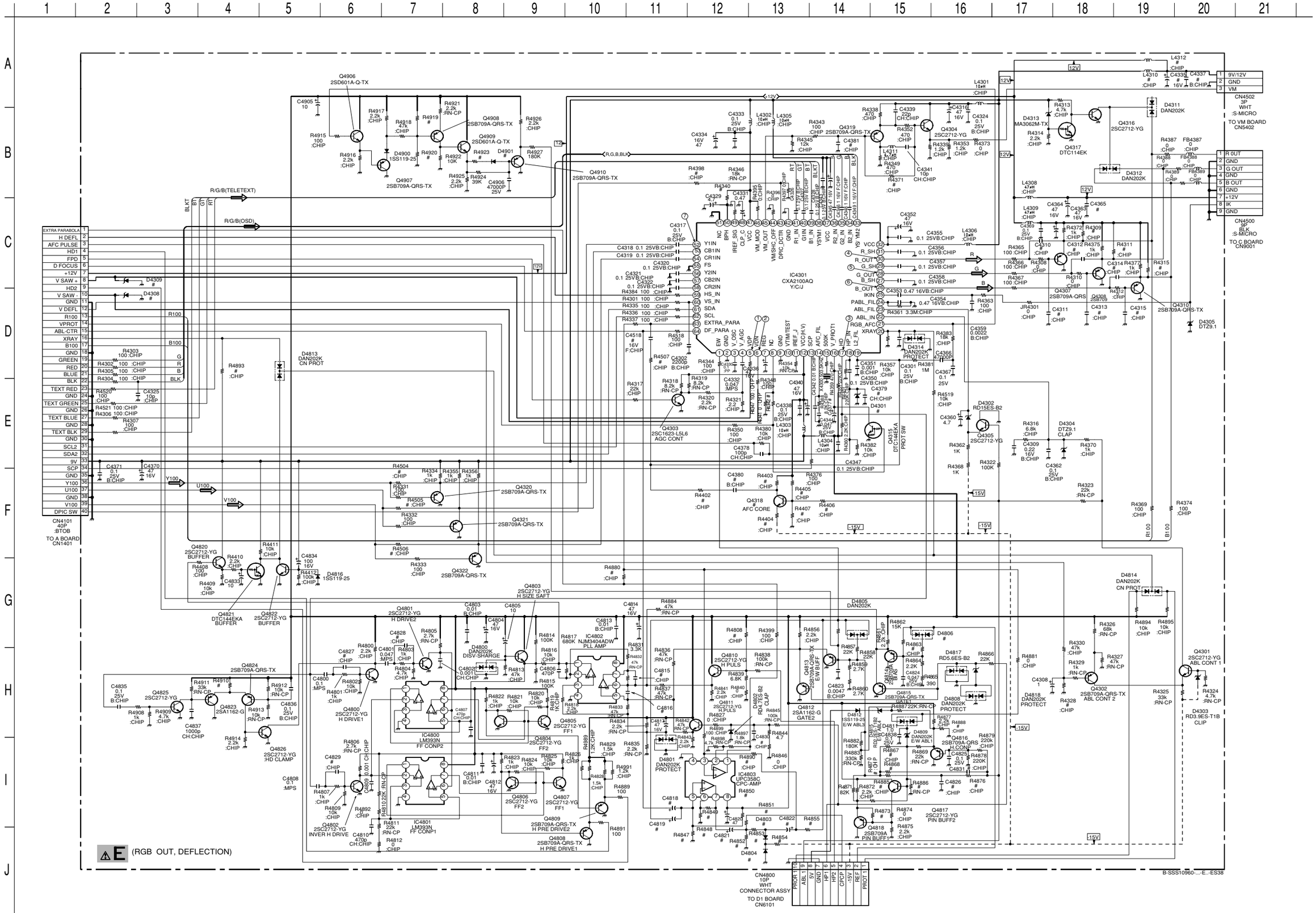
KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

(4) Schematic Diagram of C Board

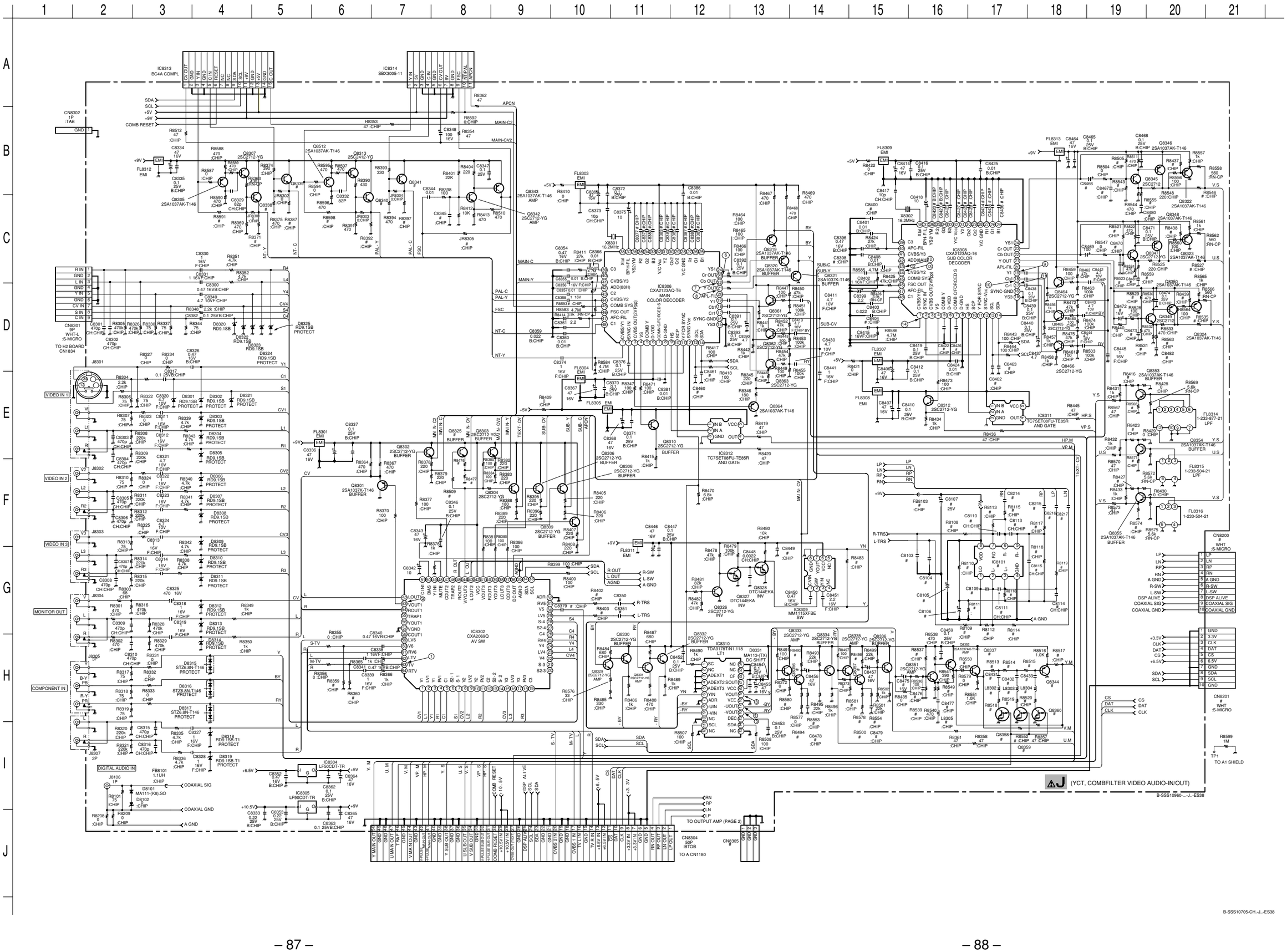


KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

(5) Schematic Diagram of E Board

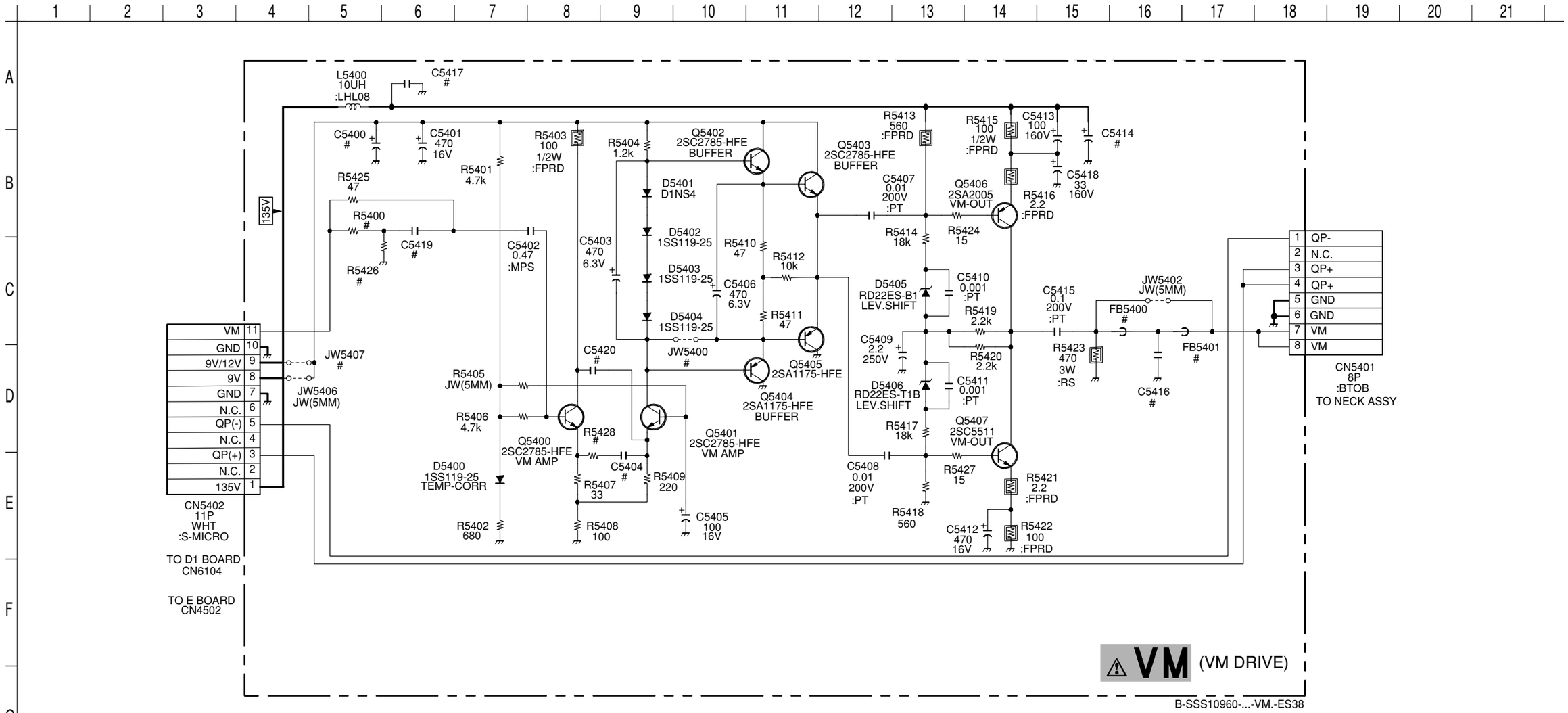

E (RGB OUT, DEFLECTION)
IC4301 CXA2100AQ Y/C/J
IC4800 LM393N FF CONP2
IC4801 LM393N FF CONP1
IC4802 NJM3404ADW PLL AMP
IC4803 UPC358C CPC-AMP
CN4101 40P :BTOB TO A BOARD CN1401
CN4500 3P BLK :S-MICRO TO C BOARD CN9001
CN4502 3P WHT :S-MICRO TO VM BOARD CN5402
CN4800 10P WHT CONNECTOR ASSY TO D1 BOARD CN6101
B-SSS10960-...-E...ES38

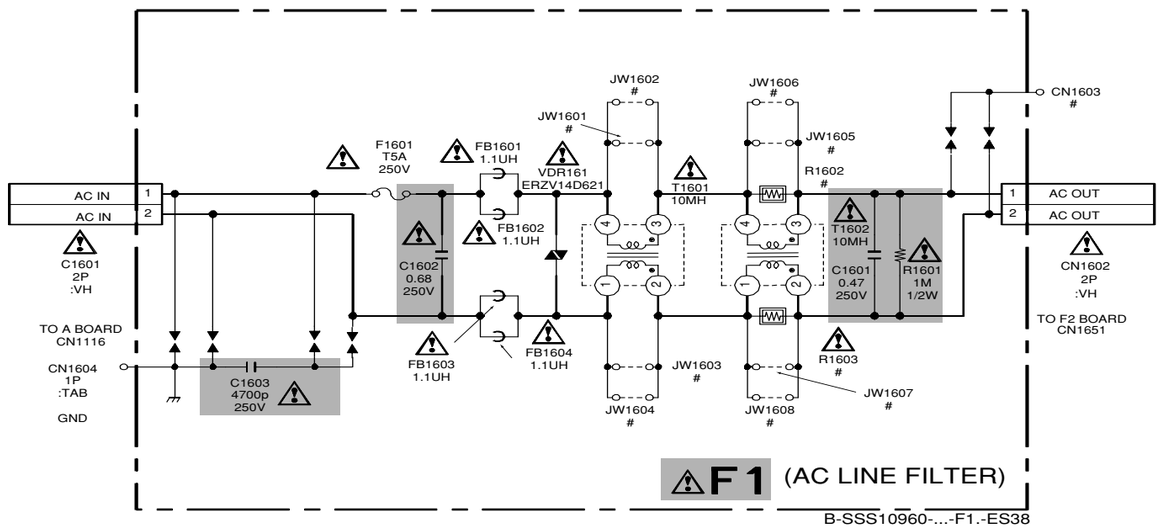
(6) Schematic Diagram of J Board



KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

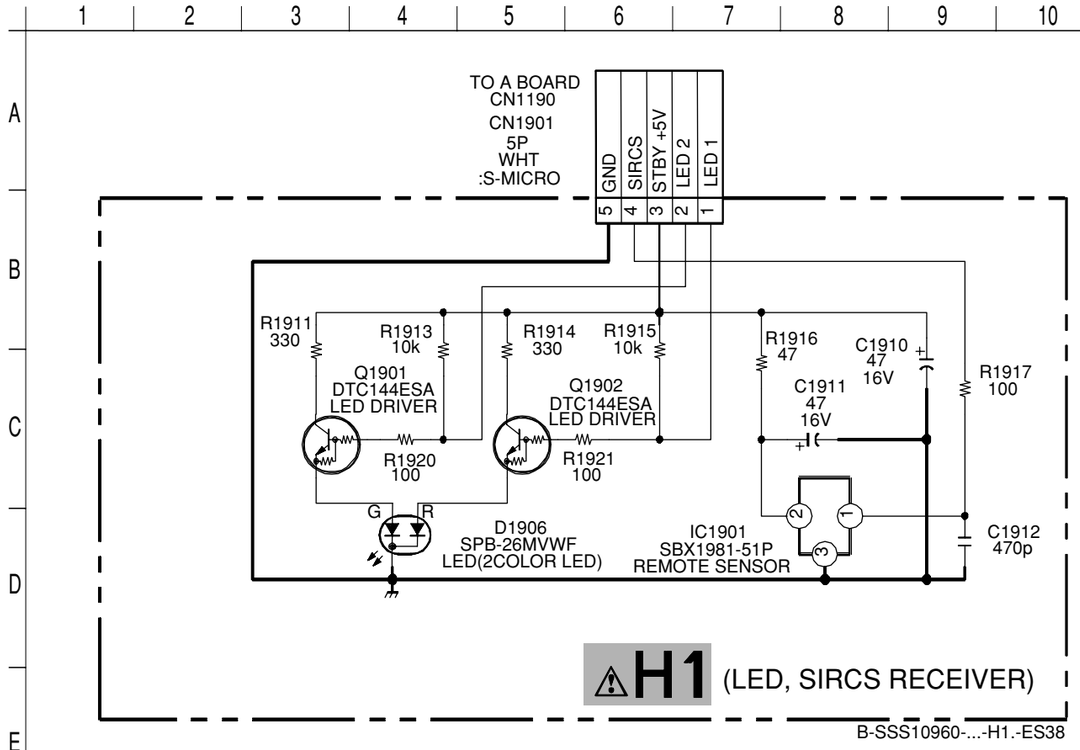
(7) Schematic Diagrams of VM and F1 Boards

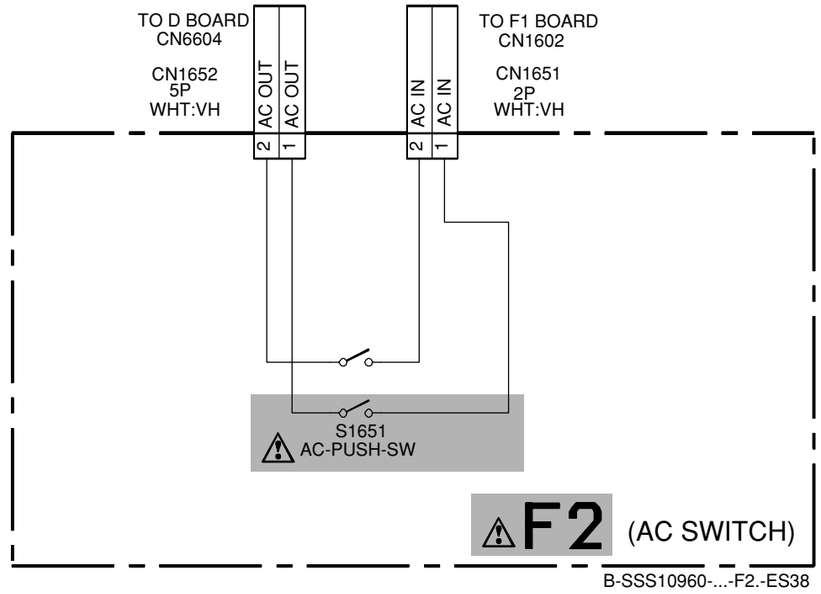


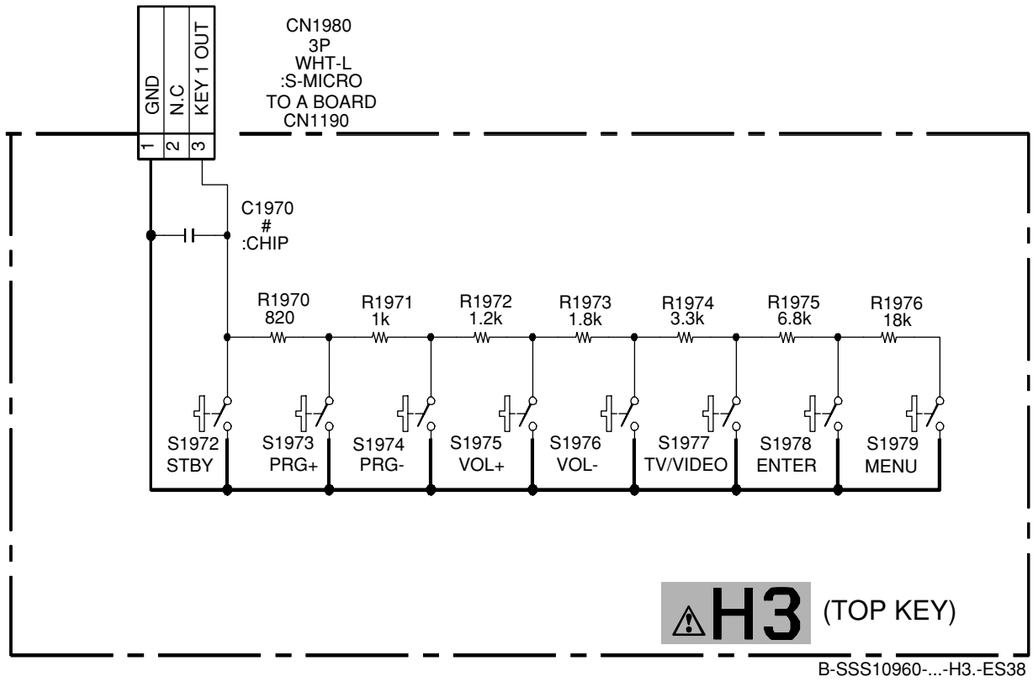


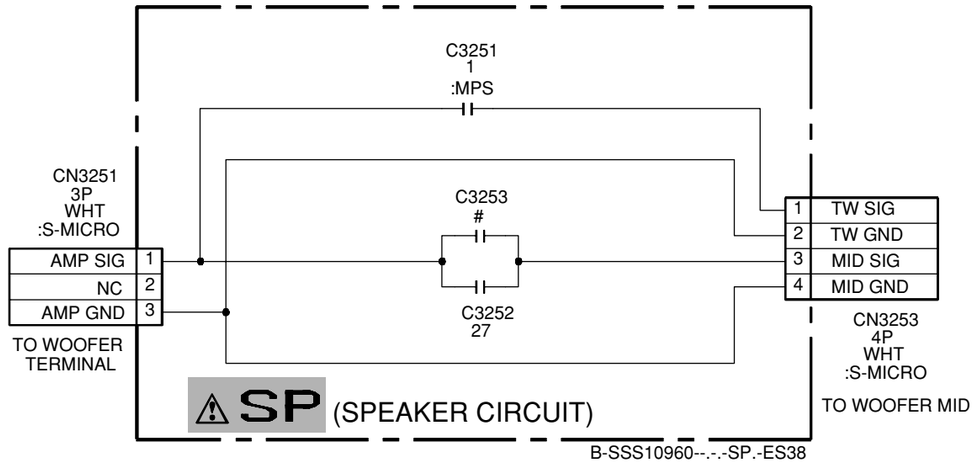
KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

(8) Schematic Diagrams of H1, H3, F2 and SP Boards



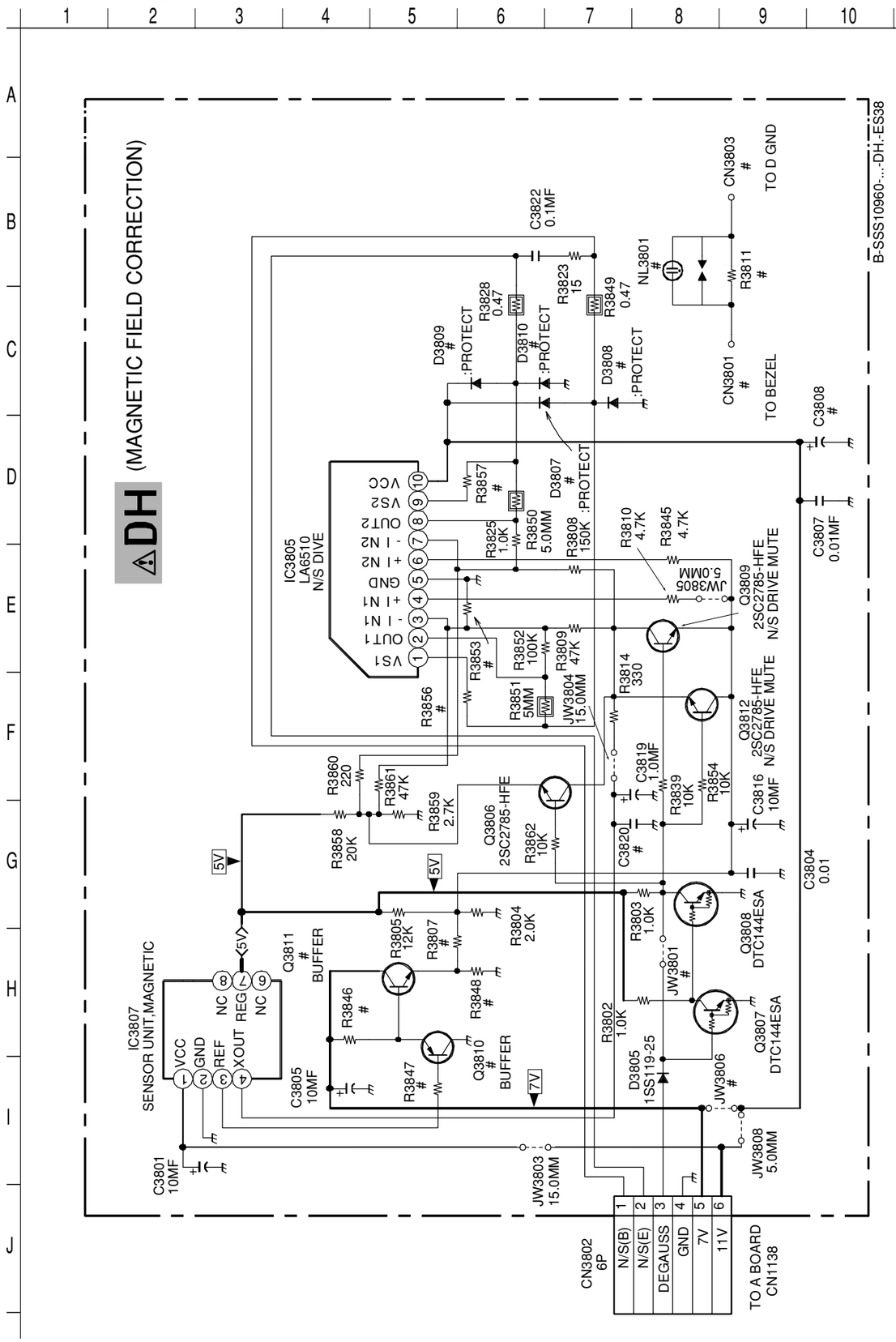


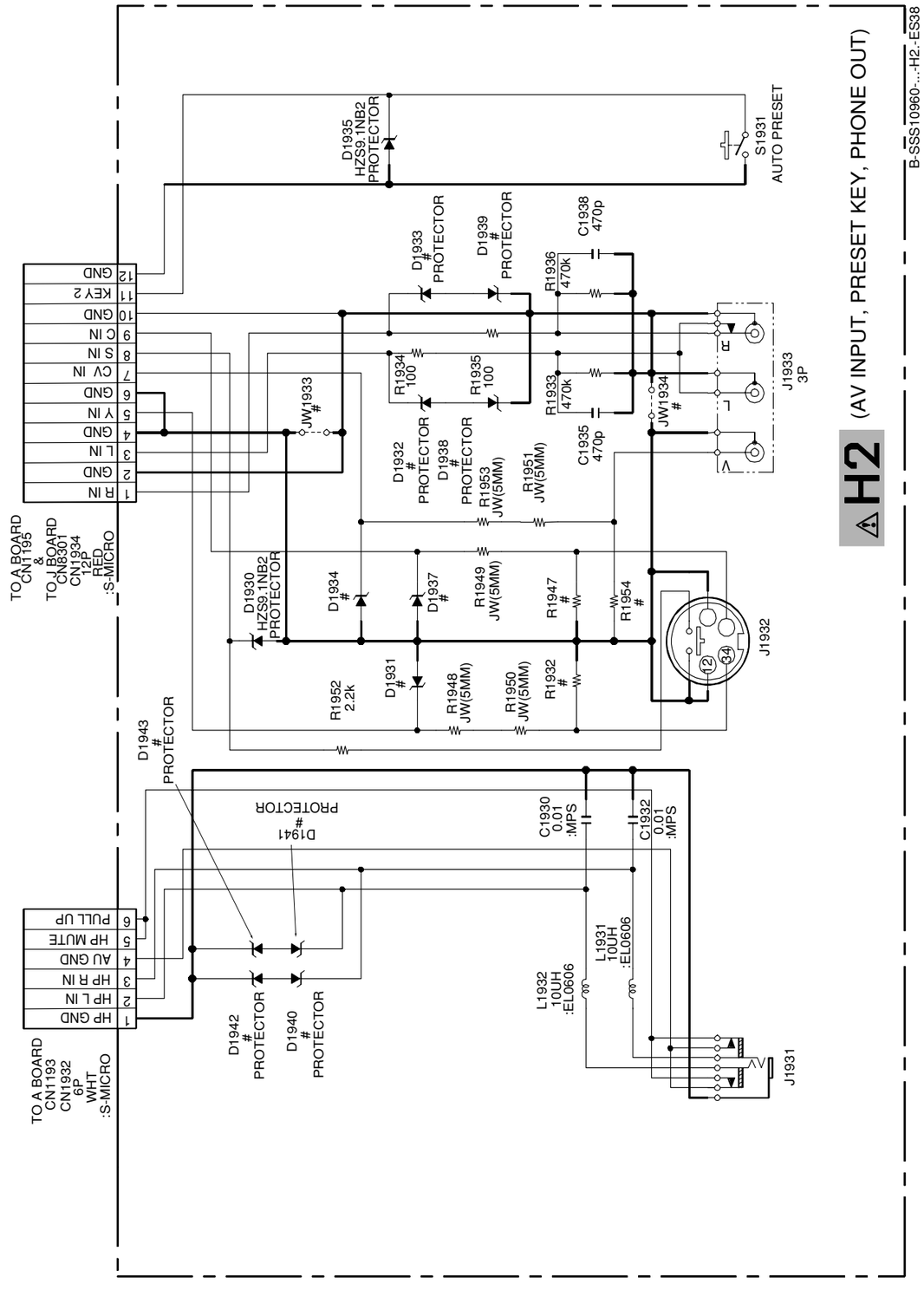




KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

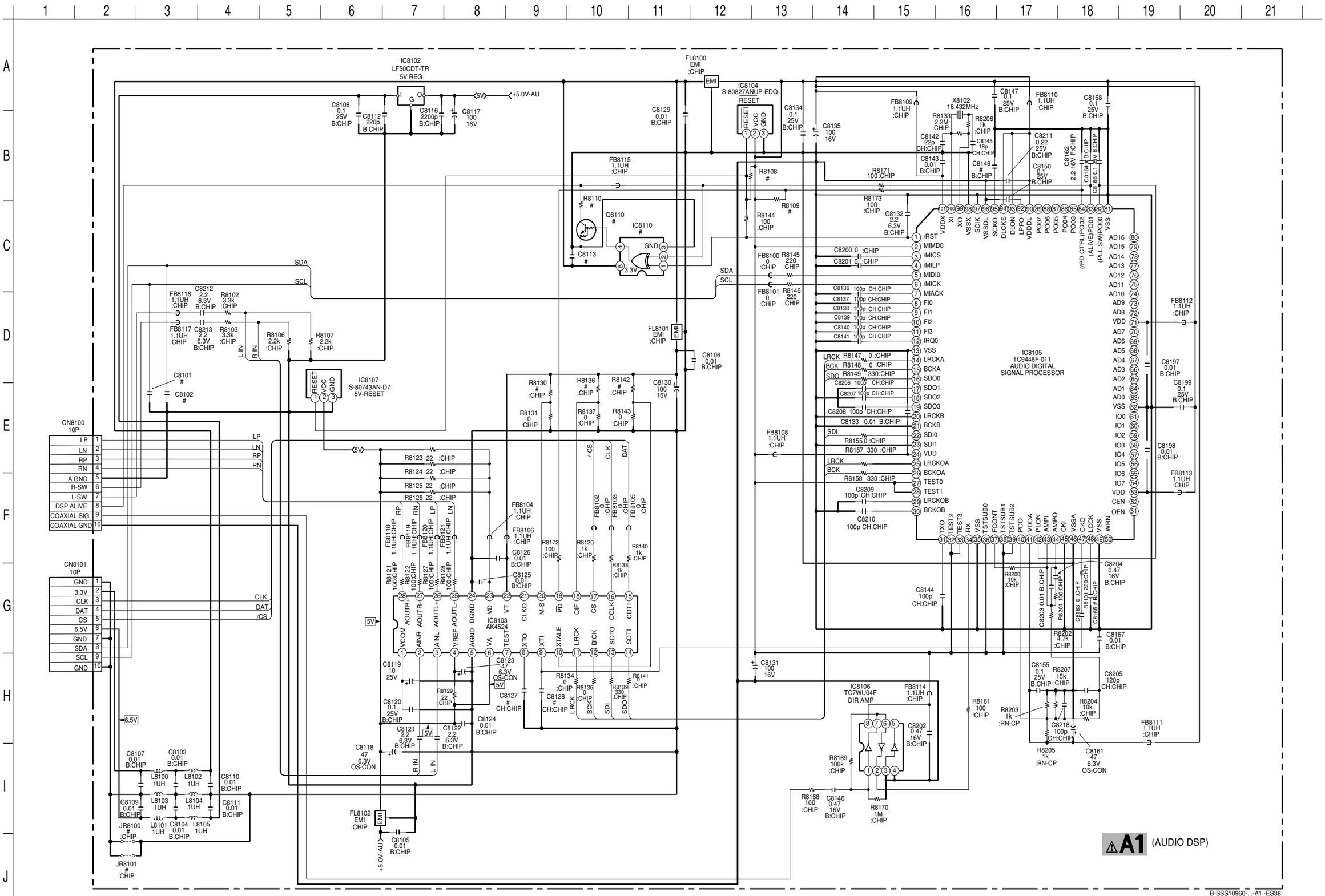
(9) Schematic Diagrams of DH and H2 Boards





KV-ES38M31/ES38M61/ES38M90/ES38M91 RM-916

(10) Schematic Diagram of A1 Board



KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

(11) Schematic Diagram of BC4 Board

⚠BC4 (3D DIGITAL COMB FILTER)

5V	A5V
5V-2	D5V
3.3V	A3.3V
3.3V-2	D3.3V
9V	9V

IC2003 MSM51426SC-60JS MEMORY

IC2004 UPD64082GF-3BA 3D COMB/HH DEC

IC2005 PQ3TZ53U 3.3V REG

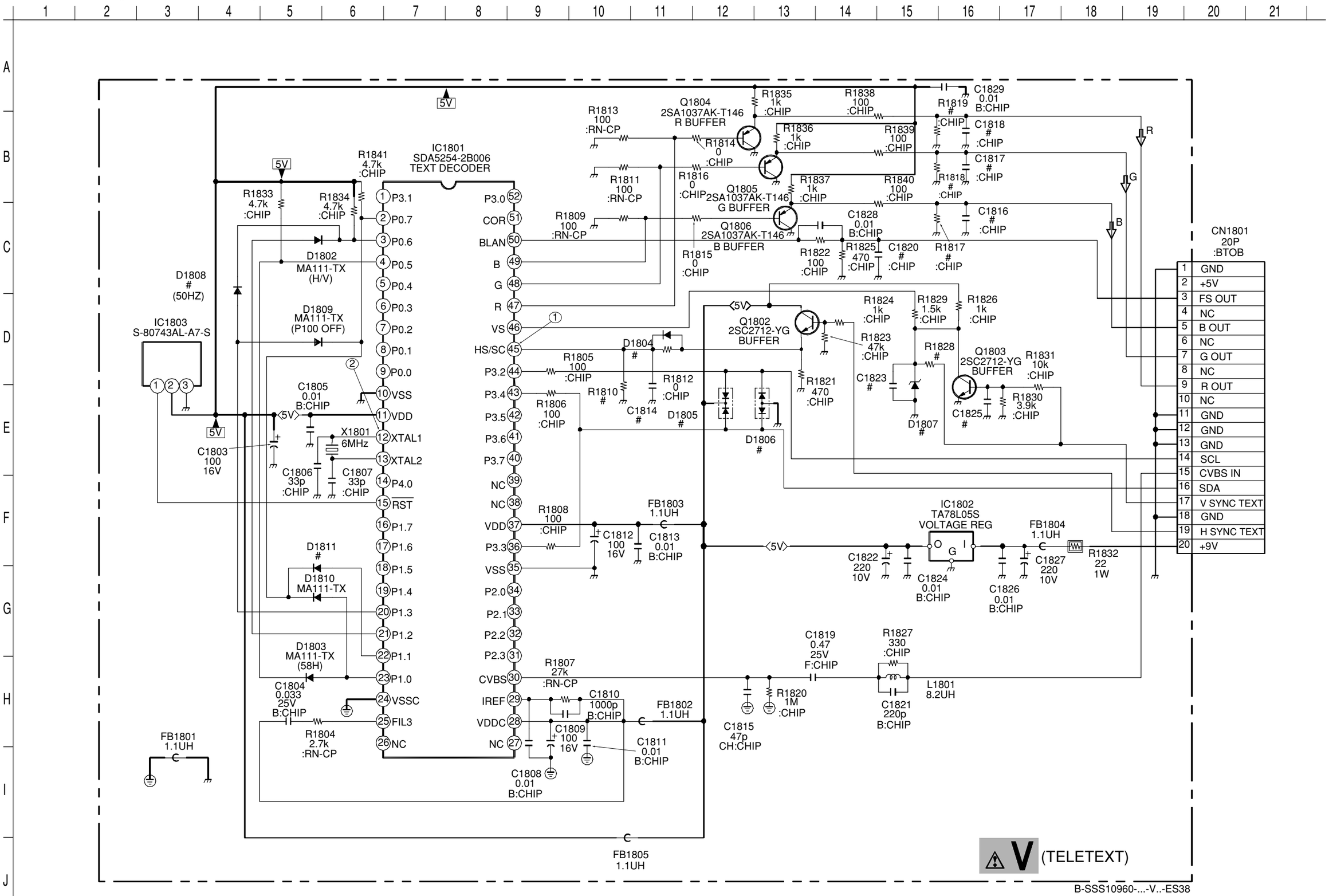
CN2001 15P TO J BOARD IC8313

1	COMP V IN
2	E
3	Y OUT
4	E
5	C OUT
6	RESET
7	Y IN
8	MN/NT
9	S DAT
10	S CLK
11	9V
12	E
13	5V
14	E
15	C IN

B-SSS10960-...-BC4-ES38

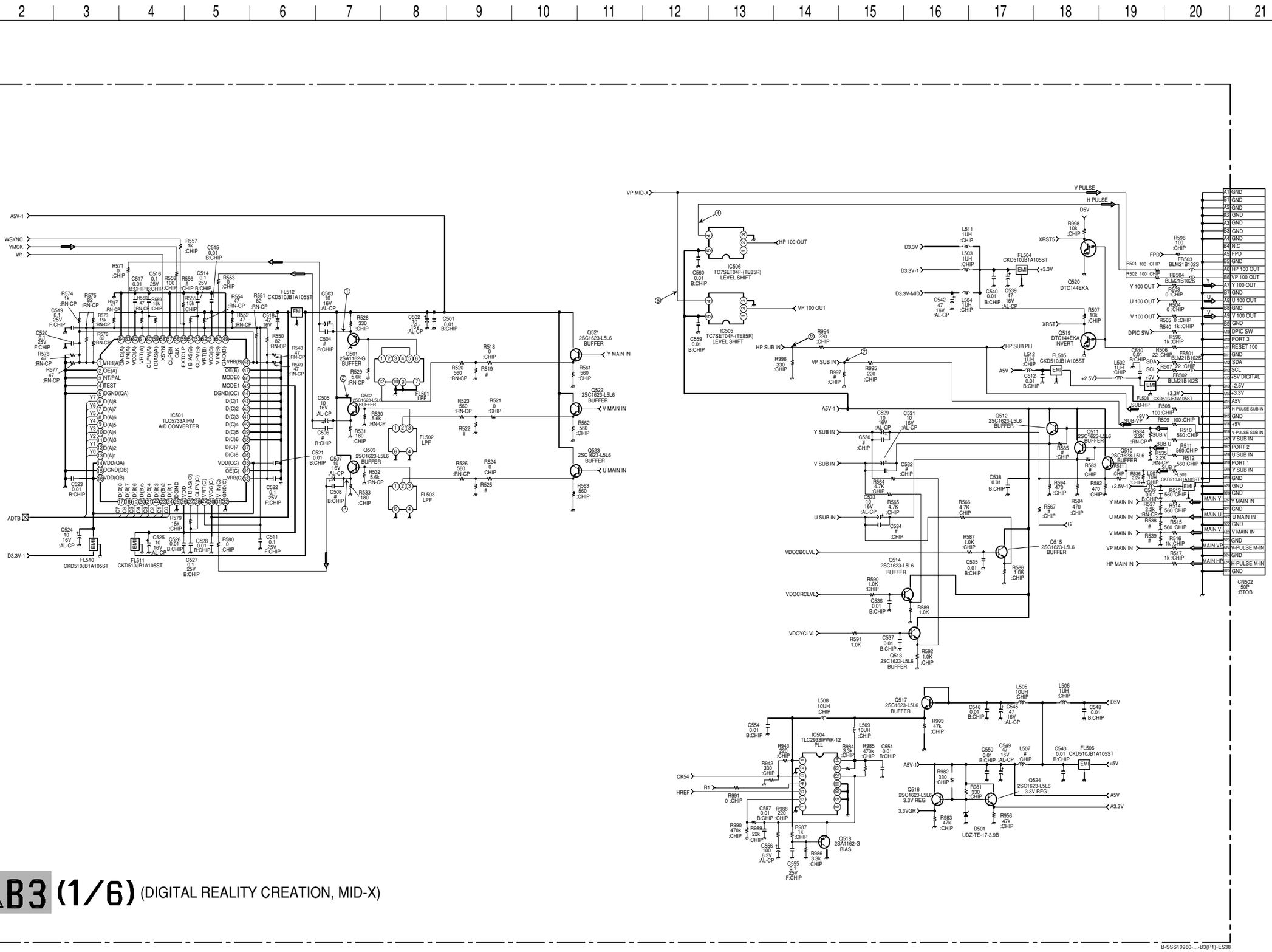
KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

(12) Schematic Diagram of V Board (except KV-ES38N90)



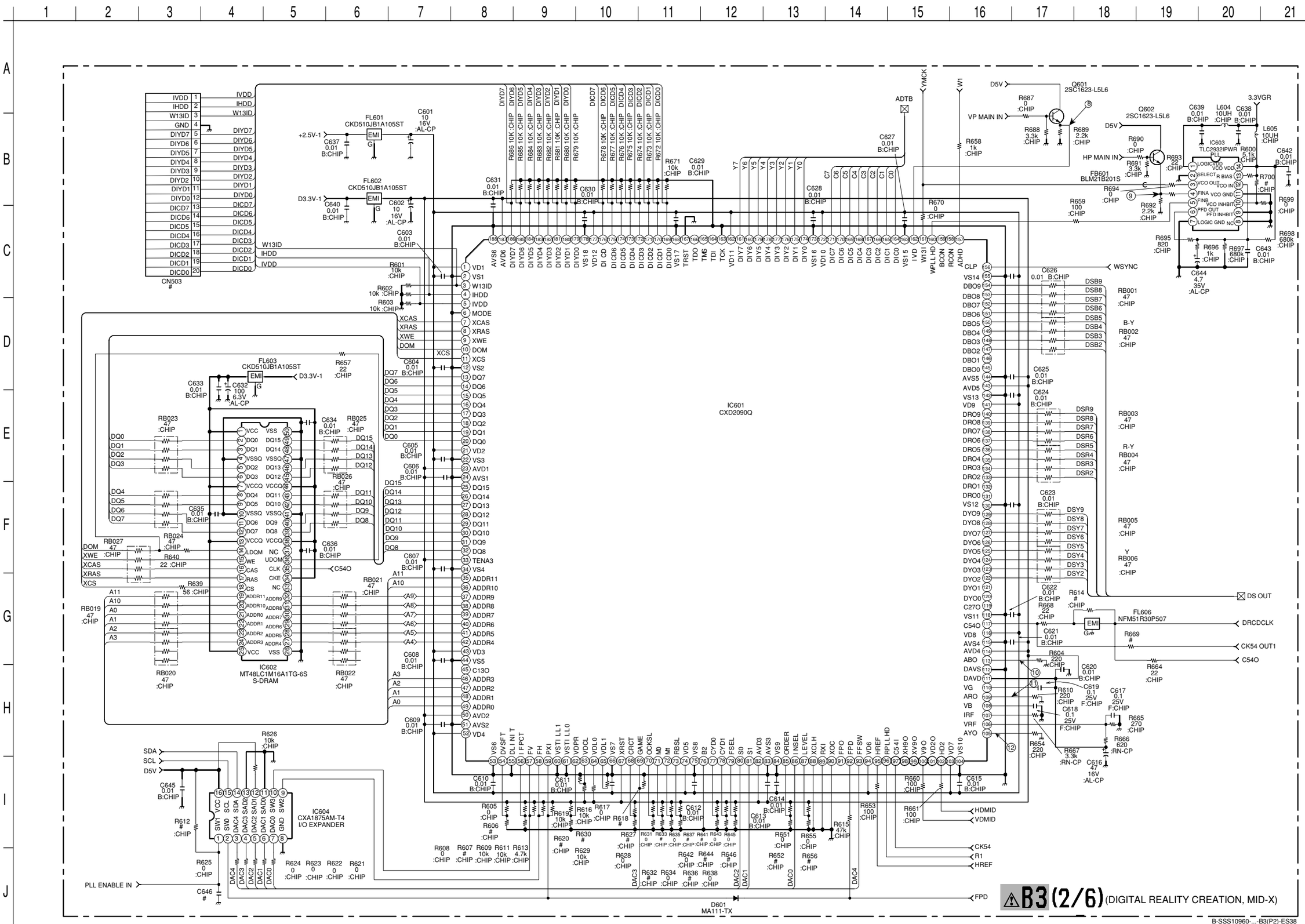
KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

(13) Schematic Diagram of B3 Board

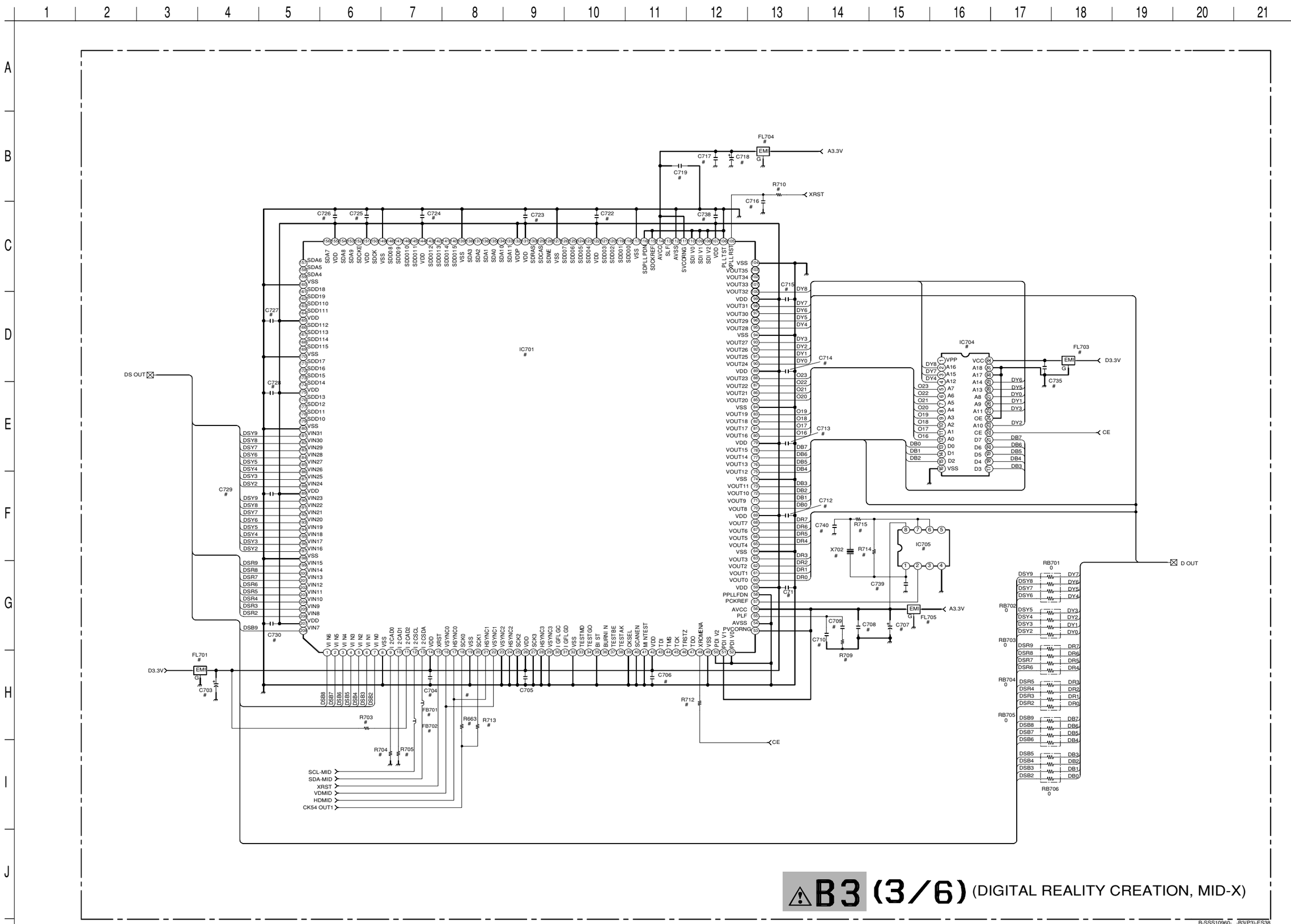


⚠B3 (1/6) (DIGITAL REALITY CREATION, MID-X)

KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

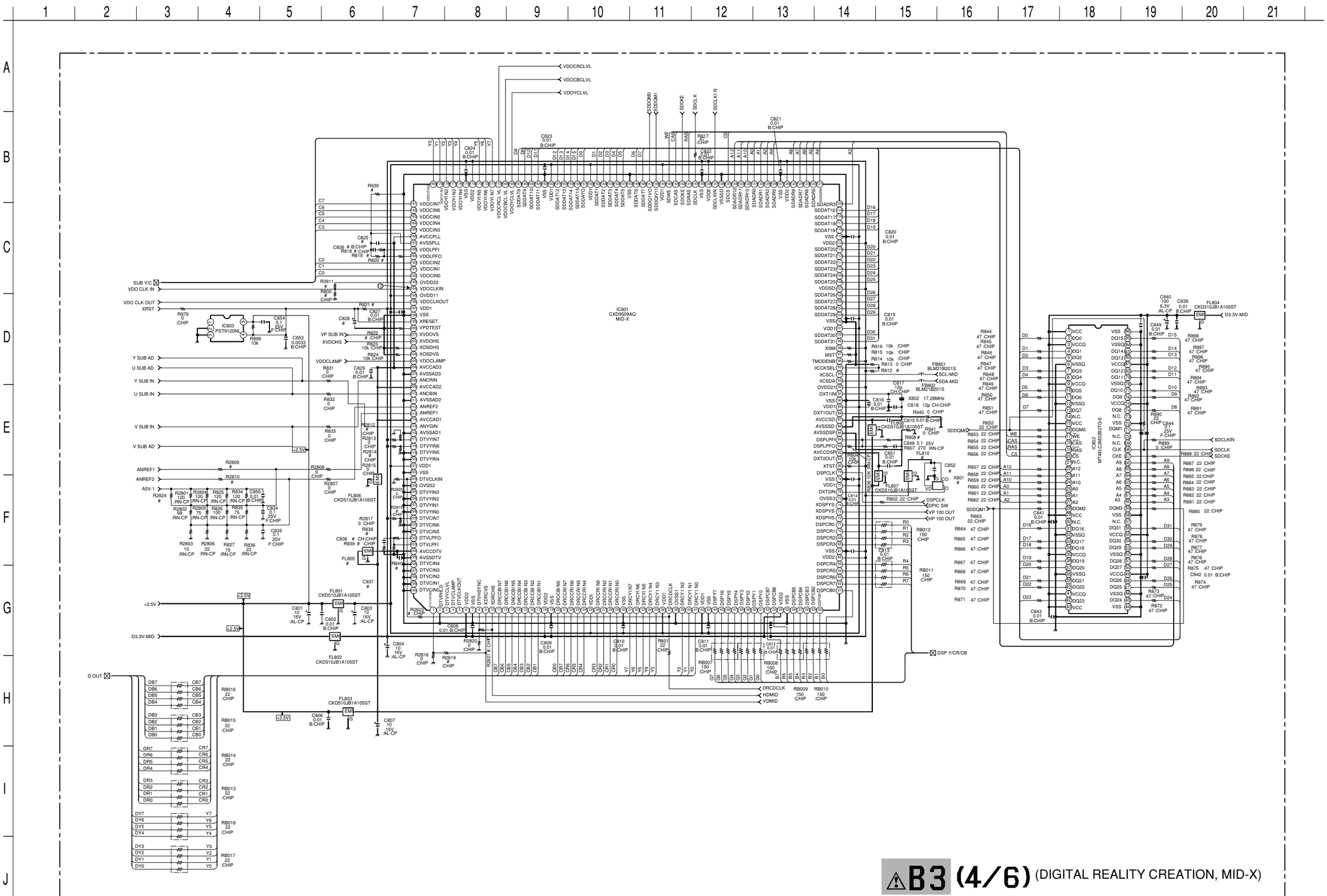


KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916



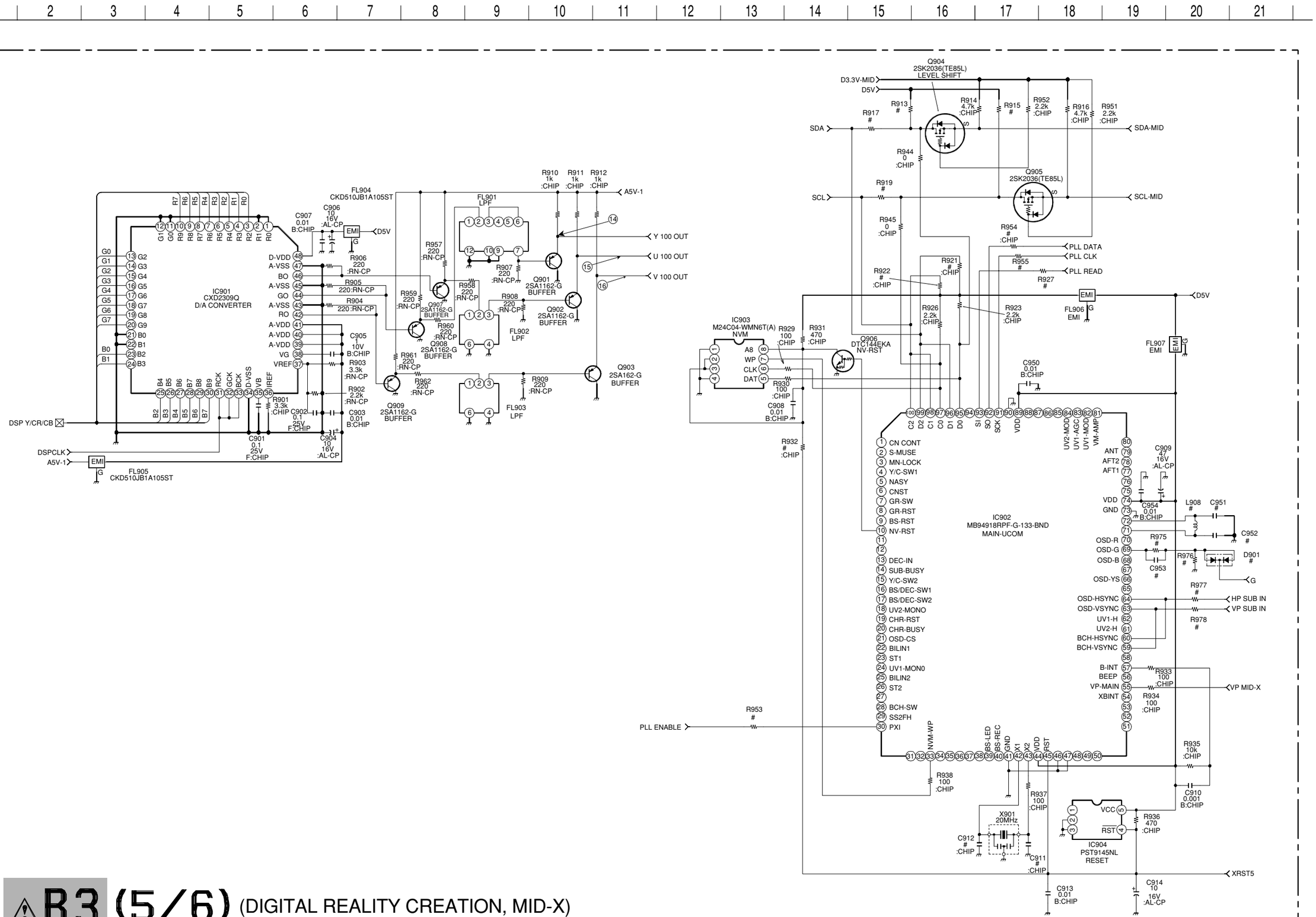
⚠B3 (3/6) (DIGITAL REALITY CREATION, MID-X)

KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916



⚠B3 (4/6) (DIGITAL REALITY CREATION, MID-X)

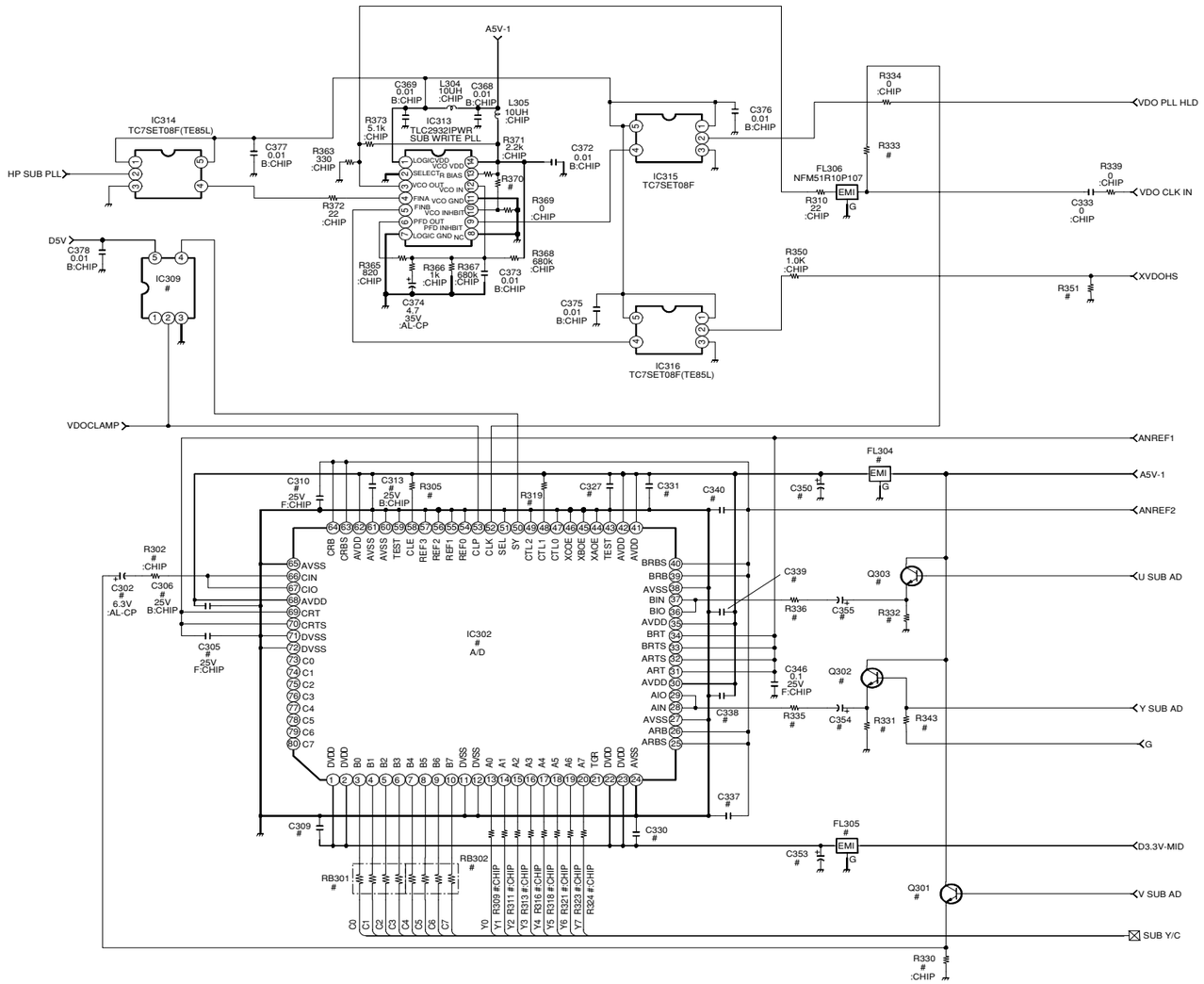
KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916



⚠B3 (5/6) (DIGITAL REALITY CREATION, MID-X)

B-SSS10960-...-B3(P5)-ES38

KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916



⚠B3 (6/6) (DIGITAL REALITY CREATION,MID-X)

B-SSS10960-...-B3(P6)-ES38

A Board ✲ Mark List

	KV-ES38M31	KV-ES38M61	KV-ES38M90	KV-ES38M91
CN1118	20P	20P	#	20P

Note: The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

DH Board ✲ Mark List

	KV-ES38M31	KV-ES38M61	KV-ES38M90	KV-ES38M91
R3805	2K :RN	1.5K :RN	1.2K :RN	1.2K :RN
R3858	20K :RN	18K :RN	18K :RN	18K :RN
R3859	1K :RN	1.5K :RN	2.4K :RN	2.4K :RN

Note: The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

D Board ✲ Mark List

	KV-ES38M31	KV-ES38M61	KV-ES38M90	KV-ES38M91
T6803	NX-4601//J1B4	NX-4601//J1J4	NX-4601//J1J4	NX-4601//J1J4

Note: The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

7-3. VOLTAGE MEASUREMENT

A BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC001	1	5.0
	2	0
	3	0.1
	4	<[5.0]>(0)
	5	5.0
	6	0
	7	0.3
	8	0.3
	9	<[0]>(5.0)
	10	<[5.0]>(0)
	11	<[0]>(2.4)
	12	<[0]>(3.2)
	13	<[0]>(5.0)
	14	<[0]>(5.0)
	15	0
	16	<[3.2]>(0.2)
	17	<[2.5]>(2.0)
	18	<[2.6]>(0)
	19	<[5.0]>(0)
	20	0
	21	0
	22	<[0]>(5.0)
	23	0
	24	0
	25	0
	26	<[0]>(5.0)
	27	<[0]>(0.6)
	28	0
	29	<[2.3]>(0)
	30	<[0]>(5.0)
	31	0
	32	0
	33	0
	34	0
	35	<[5.0]>(0)
	36	0
	37	0
	38	<[2.6]>(0)
	39	<[2.6]>(0)
	40	<[4.8]>(0)
	41	5.0
	42	0
	43	0.1
	44	0.1
	45	0
	46	0
	47	<[5.0]>(0)
	48	<[4.0]>(4.5)
	49	<[5.0]>(4.3)
	50	<[4.5]>(3.9)
	51	0
	52	<[2.4]>(0)
	53	0
	54	0
	55	0
	56	0
	57	0.1
	58	0
	59	0
	60	0
	61	0
	62	<[0]>(4.5)
	63	0.3
	64	<[4.9]>(0)
IC002	1	<[0]>(0.5)
	2	5.0
	3	0
IC003	1	0
	2	0
	3	0
	4	0
	5	5.0
	6	5.0
	7	0
	8	5.0
IC100	1	4.8
	2	4.8
	3	0
IC1201	1	4.4
	2	9.0
	3	0
	4	4.4
	5	4.4
	6	0
	7	4.4
	8	0
	9	4.4
	10	0
	11	4.4
	12	4.4
	13	4.4
	14	4.4
	15	4.4
	16	4.4
	17	4.4
	18	4.4
	19	4.3
	20	4.4
IC1203	1	-3.3
	2	-15.8
	3	✻
	4	-0
	5	-16.6
	6	-5.3
	7	0
	8	-18.3
	9	-16.1
	10	7.4
	11	19.1
	12	0
	13	0
	14	0
	15	0
IC1204	1	0
	2	-8.0
	3	9.9
	4	0
	5	0
	6	-15.9
	7	0
	8	-19.0
	9	0
	10	5.9
	11	19.1
	12	-8.0
	13	19.1
	14	-19.0
	15	-19.0
IC1205	1	4.5
	2	0
	3	0
	4	0
	5	4.5
	6	4.5
	7	4.5
	8	9.0
IC2200	1	4.5
	2	0
	3	4.4
	4	0
	5	4.4
	6	0
	7	4.5
	8	9.0
IC2600	I	12.1
	G	0
	O	9.0
IC2601	I	6.8
	G	0
	O	5.0
IC2604	1	3.3
	2	2.5
	3	0
	4	1.2
	5	3.3
Q001	B	0
	C	0
	E	5.0
Q002	B	5.0
	C	0
	E	0
Q101	B	8.9
	C	2.1
	E	2.8
Q301	B	0
	C	12.0
	E	11.6
Q313	B	11.6
	C	0
	E	0
Q1205	B	0
	C	0
	E	0
Q1206	B	0.1
	C	0
	E	0
Q1207	B	5.5
	C	0
	E	0
Q1209	B	0
	C	0
	E	0
Q1210	B	0
	C	0
	E	0
Q1211	B	0
	C	0
	E	0
Q2200	B	0
	C	0
	E	0
Q2201	B	0
	C	0
	E	0
Q3300	B	3.1
	C	8.9
	E	8.3

A1 BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC8102	I	3.1
	G	0
	O	5.0
IC8103	1	2.5
	2	2.5
	3	2.5
	4	0
	5	0
	6	4.9
	7	0
	8	1.4
	9	1.4
	10	3.2
	11	0
	12	1.6
	13	1.2
	14	1.2
	15	4.9
	16	2.4
	17	4.9
	18	0
	19	0
	20	3.2
	21	0
	22	0
	23	4.9
	24	0
	25	2.5
	26	2.5
	27	2.4
	28	2.4
IC8104	1	2.2
	2	3.2
	3	0
IC8105	1	3.2
	2	3.2
	3	0
	4	0
	5	4.4
	6	4.5
	7	3.2
	8	3.2
	9	3.2
	10	3.2
	11	3.2
	12	0
	13	0
	14	0
	15	0
	16	0
	17	0
	18	0
	19	0
	20	0
	21	0
	22	0.7
	23	0
	24	3.2
	25	0
	26	0
	27	3.2
	28	3.2
	29	0
	30	0
	31	0
	32	3.2
	33	3.2
	34	0.3
	35	0
	36	3.2
	37	1.6
	38	3.2
	39	3.2
	40	1.6
	41	3.2
	42	0
	43	2.9
	44	0
	45	0
	46	0
	47	0
	48	0
	49	0
	50	3.2
	51	0
	52	3.2
	53	3.2
	54	3.2
	55	3.2
	56	3.2
	57	3.2
	58	3.2
	59	3.2
	60	3.2
	61	3.2
	62	0
	63	0
	64	3.2
	65	3.2
	66	0
	67	3.2
	68	0
	69	0
	70	3.2
	71	3.2
	72	3.2
	73	3.2
	74	3.2
	75	0
	76	0
	77	3.2
	78	3.2
	79	0
	80	0
	81	0
	82	0
	83	0
	84	0
	85	0
	86	0
	87	0
	88	0
	89	3.2
	90	3.2
	91	0.9
	92	3.2
	93	3.2
	94	0
	95	0
	96	0
	97	0
	98	1.3
	99	1.4
	100	3.3
IC8106	1	1.7
	2	0.3
	3	0.1
	4	0
	5	3.2
	6	1.9
	7	1.9
	8	3.2
IC8107	1	-3.6
	2	1.3
	3	0

B3(1/5) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
IC302	1	0		68	4.7	IC311	I	8.9
	2	3.2		69	1.9		G	0
	3	1.3		70	1.9		O	5
	4	1.3		71	0	IC501	1	0
	5	1.3		72	0		2	0
	6	1.3		73	0.1		3	0
	7	1.3		74	0		4	0
	8	1.3		75	0		5	0
	9	1.3		76	0		6	1.1
	10	1.3		77	0		7	1.1
	11	0		78	0.1		8	1.0
	12	0		79	0.1		9	0.8
	13	0.5		80	0.1		10	1.5
	14	0 .5	IC303	1	4.9		11	0
	15	0.5		2	0		12	1.6
	16	0.5		3	0		13	1.4
	17	0.5		4	0		14	3.2
	18	-0.5		5	0		15	0
	19	0.6		6	1.7		16	3.2
	20	0		7	4.4		17	1.4
	21	1.3		8	3.7		18	1.6
	22	3.2		9	0.2		19	1.4
	23	3.2		10	4.9		20	1.6
	24	0		11	0		21	1.8
	25	0.3		12	0		22	1.6
	26	0.3		13	4.9		23	1.7
	27	0		14	4.9		24	1.6
	28	0.1		15	2.2		25	0
	29	0.1		16	2.7		26	4.7
	30	4.7		17	4.9		27	2.4
	31	1.9		18	4.9		28	0
	32	1.9		19	0		29	3.3
	33	1.9		20	0		30	0
	34	1.9		21	0		31	0
	35	4.7		22	0.1		32	0
	36	4.1		23	1.4		33	1.4
	37	4.1		24	0.3		34	0
	38	0		25	0		35	3.2
	39	0.3		26	4.9		36	1.4
	40	0.3		27	0		37	0
	41	4.7		28	4.9		38	0
	42	4.7		29	4.9		39	0
	43	0		30	0		40	0
	44	0		31	0		41	0
	45	0		32	0		42	0
	46	0		33	0		43	0
	47	4.6		34	0		44	0
	48	0		35	0		45	4.7
	49	4.9		36	4.9		46	0
	50	0		37	0		47	0
	51	1.5		38	0		48	0
	52	0		39	4.9		49	0.1
	53	0		40	0		50	0.1
	54	0		41	4.9		51	4.6
	55	0		42	0		52	4.6
	56	0		43	0		53	2.3
	57	4.6		44	1.1		54	2.3
	58	0		45	1.8		55	-0.0
	59	0		46	0		56	1.4
	60	0		47	0		57	-0.1
	61	0		48	0		58	3.1
	62	4.7	IC309	1	0		59	1.4
	63	0.3		2	0		60	1.4
	64	0		3	0		61	3.2
	65	0		4	4.9		62	4.6
	66	1		5	4.9		63	1.9
	67	1.1					64	-0.1

B3(2/5) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
IC504	1	4.2		51	0		121	1.3
	2	0		52	2.3		122	0
	3	0		53	0		123	1.3
	4	0		54	3.2		124	1.4
	5	0		55	0		125	1.0
	6	0.3		56	0		126	1.1
	7	0		57	3.2		127	1.0
	8	0		58	3.2		128	1.0
	9	0		59	2.7		129	1.1
	10	0		60	0		130	0
	11	0		61	0		131	1.0
	12	1.4		62	0		132	1.1
	13	2.8		63	0		133	0
	14	4.2		64	3.0		134	1.5
IC505	1	0		65	0.4		135	0
	2	3.2		66	0		136	1.7
	3	0		67	3.2		137	1.6
	4	0		68	0		138	1.1
	5	0		69	0		139	0
IC601	1	2.3		70	0		140	1.8
	2	0		71	3.2		141	2.3
	3	0		72	0		142	0
	4	0		73	2.3		143	0
	5	0		74	0		144	0
	6	0		75	0		145	1.2
	7	3.1		76	0		146	1.2
	8	3.1		77	3.2		147	1.5
	9	3.1		78	3.2		148	0
	10	0.5		79	0		149	1.7
	11	3.1		80	0		150	2.0
	12	0		81	3.2		151	1.5
	13	1.3		82	0		152	0
	14	1.4		83	0		153	1.7
	15	1.3		84	3.2		154	1.4
	16	1.1		85	0.3		155	0
	17	1.4		86	3.2		156	0
	18	1.5		87	0		157	3.2
	19	1.6		88	0		158	3.0
	20	1.5		89	0		159	3.1
	21	0		90	0		160	1.3
	22	3.2		91	1.6		161	1.4
	23	0		92	3.0		162	0
	24	1.5		93	2.3		163	0
	25	1.2		94	1.6		164	1.6
	26	1.1		95	3.2		165	1.6
	27	1.1		96	1.8		166	1.6
	28	1.3		97	3.0		167	1.5
	29	1.4		98	3.2		168	1.6
	30	1.4		99	0		169	1.4
	31	1.4		100	0		170	1.5
	32	3.2		101	0		171	1.5
	33	0		102	0.2		172	2.3
	34	0		103	2.3		173	0
	35	0		104	0		174	1.4
	36	0		105	0.3		175	1.5
	37	0		106	1.0		176	1.7
	38	0		107	0.9		177	1.5
	39	0		108	0		178	0.7
	40	0		109	0.5		179	1.0
	41	0		110	2.0		180	1.2
	42	0		111	3.3		181	1.2
	43	2.3		112	0		182	2.4
	44	0		113	0.5		183	0
	45	1.3		114	3.2		184	3.3
	46	0		115	0		185	3.3
	47	0		116	0		186	0
	48	0		117	1.5		187	3.3
	49	0		118	0		188	0
	50	3.2		119	1.7		189	0
				120	1.3		190	0

B3(3/5) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
	191	0
	192	0
	193	0
	194	0
	195	0
	196	0
	197	2.3
	198	0
	199	0
	200	0
	201	0
	202	0
	203	0
	204	0
	205	0
	206	0
	207	3.2
	208	0
IC602	1	3.2
	2	1.5
	3	1.6
	4	0
	5	1.7
	6	1.5
	7	0
	8	1.2
	9	0
	10	0
	11	0
	12	0
	13	0
	14	0.5
	15	3.2
	16	3.1
	17	0
	18	0
	19	0
	20	0
	21	0
	22	0
	23	0
	24	0
	25	0
	26	0
	27	0
	28	0
	29	0
	30	0
	31	0
	32	0
	33	0
	34	3.2
	35	1.4
	36	0.5
	37	0
	38	3.2
	39	1.6
	40	1.6
	41	0
	42	1.5
	43	1.3
	44	3.2
	45	1.1
	46	1.2
	47	0
	48	1.4
	49	1.4
	50	0
IC603	1	0
	2	0
	3	1.4
	4	0
	5	1.3
	6	1.4
	7	0
	8	0
	9	0
	10	0
	11	0
	12	1.4
	13	0
	14	3.4
IC604	1	4.9
	2	0
	3	3.0
	4	3.0
	5	3.0
	6	0.4
	7	0.3
	8	0
	9	0
	10	3.2
	11	0
	12	4.9
	13	0
	14	4.5
	15	4.4
	16	4.9
IC801	1	0
	2	0
	3	0
	4	0
	5	0
	6	3.2
	7	0
	8	0
	9	0
	10	0.2
	11	1.4
	12	1.8
	13	1.7
	14	1.4
	15	2.0
	16	1.6
	17	1.7
	18	3.2
	19	0
	20	1.6
	21	1.7
	22	1.5
	23	1.3
	24	1.7
	25	2.4
	26	1.7
	27	1.5
	28	1.4
	29	1.5
	30	0
	31	1.0
	32	1.1
	33	-2.0
	34	-1.9
	35	-1.9
	36	-0.8
	37	-2.0
	38	-3.2
	39	-1.9
	40	-1.7
	41	0
	42	-0.6
	43	-3.0
	44	-2.0
	45	-1.9
	47	-1.8
	48	-1.8
	49	-1.6
	50	-1.6
	51	1.2
	52	1.6
	53	1.5
	54	3.1
	55	-0.1
	56	1.3
	57	1.1
	58	1.1
	59	1.2
	60	1.3
	121	0
	122	2.5
	123	0
	124	1.6
	125	0
	126	0
	127	0
	128	0
	129	2.4
	130	0
	131	0
	132	0
	133	1.6
	134	1.6
	135	2.7
	136	0
	137	1.6
	138	3.3
	139	0
	140	1.6
	141	3.2
	142	2.9
	143	2.8
	144	3.0
	145	2.4
	146	0
	147	0
	148	2.1
	149	2.1
	150	0
	151	0.2
	152	1.1
	153	0
	154	0
	155	1.0
	156	0
	157	1.3
	158	1.5
	159	2.1
	160	1.3
	161	0
	162	0
	163	0
	164	2.0
	165	1.2
	166	0.7
	167	0.1
	168	2.0
	169	1.7
	170	1.7

B3(4/5) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
	171	0		238	0		66	0
	172	0.6		239	0		67	2.9
	173	0.6		240	0		68	1.6
	174	0	IC802	1	3.2		69	0
	175	0		2	1.4		70	0
	176	0		3	3.3		71	0
	177	0		4	0.8		72	0
	178	0.5		5	0.5		73	0
	179	0.5		6	0		74	0
	180	0.5		7	1.7		75	3.2
	181	1.3		8	0		76	0.9
	182	1.3		9	0.2		77	1.1
	183	0		10	2.0		78	0
	184	1.3		11	0		79	1.9
	185	1.3		12	0		80	1.6
	186	2.4		13	0		81	3.3
	187	0		14	0		82	1.7
	188	2.4		15	0		83	2.0
	189	2.4		16	0		84	0
	190	1.3		17	3.0		85	1.4
	191	0		18	2.8		86	0
	192	1.4		19	3.2	IC901	1	0
	193	3.2		20	2.7		2	0
	194	1.5		21	0		3	1.3
	195	2.4		22	1.6		4	1.2
	196	1.6		23	0		5	0
	197	0		24	0		6	1.4
	198	0		25	0		7	0
	199	0		26	0		8	0
	200	0		27	2.4		9	0
	201	0		28	0		10	0
	202	0		29	3.2		11	0
	203	0		30	0		12	0
	204	0		31	1.5		13	1.3
	205	0		32	0		14	1.3
	206	0.4		33	1.4		15	0
	207	0		34	1.1		16	1.1
	208	1.2		35	3.2		17	1.1
	209	2.4		36	3.2		18	1
	210	1.2		37	1.7		19	0
	211	0		38	0		20	1.1
	212	1.2		39	1.2		21	0
	213	0		40	1.4		22	0
	214	2.4		41	3.2		23	0
	215	0		42	0.8		24	0
	216	0		43	3.2		25	1.5
	217	0		44	0		26	1.9
	218	0		45	0		27	1.5
	219	0		46	0		28	0
	220	0		47	0		29	1.5
	221	2.4		48	0		30	1.7
	222	0		49	0		31	1.2
	223	0		50	0		32	1.2
	224	0		51	1.9		33	1.2
	225	0		52	0		34	0
	226	0		53	1.4		35	0.9
	227	0		54	1.3		36	1.9
	228	0		55	0		37	1.9
	229	0		56	3.2		38	2.3
	230	0		57	0		39	4.7
	231	0		58	0		40	4.7
	232	0.3		59	0		41	4.7
	233	0		60	0		42	0.5
	234	2.4		61	2.4		43	0
	235	0		62	2.4		44	0.3
	236	0		63	1.9		45	0
	237	0		64	1.6		46	0.5
				65	0		47	0
							48	4.9

B3(5/5) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC902	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	0
	9	0
	10	0
	11	0
	12	0
	13	0
	14	0
	15	0
	16	0
	17	0
	18	0
	19	0
	20	0
	21	0
	22	0
	23	4.9
	24	0
	25	0
	26	0
	27	0
	28	0
	29	4.9
	30	4.9
	31	0
	32	0
	33	4.9
	34	0
	35	0
	36	0
	37	0
	38	0
	39	0
	40	0
	41	0
	42	2.3
	43	2.3
	44	4.9
	45	4.9
	46	0
	47	0
	48	1.9
	49	2.4
	50	0
	51	0
	52	0
	53	0
	54	0
	55	0
	56	0
	57	4.9
	58	0
	59	0
	60	0.1
	61	4.9
	62	4.9
	63	0
	64	0.1
	65	0
	66	0
	67	0
	68	0
	69	0
	70	0
	71	4.9
	72	4.9
	73	0
	74	4.9
	75	0
	76	0
	77	0
	78	0
	79	0
	80	0
	81	0
	82	0
	83	4.9
	84	4.9
	85	1.1
	86	0
	87	0
	88	0
	89	4.9
	90	0
	91	4.9
	92	0
	93	2.2
	94	0
	95	4.9
	96	4.9
	97	4.9
	98	4.9
	99	4.5
	100	4.4
IC903	1	0
	2	0
	3	4.9
	4	0
	5	4.9
	6	4.9
	7	4.9
	8	0
IC904	1	0
	2	0
	3	0
	4	4.9
	5	4.9
Q501	B	0
	C	0
	E	0
Q502	B	0
	C	0
	E	0
Q503	B	0
	C	0
	E	1.1
Q510	B	0
	C	2.6
	E	2
Q511	B	0
	C	1.7
	E	1
Q512	B	4.7
	C	1.6
	E	1
Q513	B	4.7
	C	2
	E	2
Q514	B	4.7
	C	1.7
	E	✻
Q515	B	4.7
	C	1.8
	E	0
Q517	B	4.9
	C	4.9
	E	4.2
Q521	B	0
	C	2.6
	E	1.9
Q522	B	4.7
	C	3.1
	E	2.5
Q523	B	4.7
	C	2.5
	E	1.9
Q601	B	0
	C	0
	E	0
Q602	B	4.9
	C	0
	E	0
Q903	B	0
	C	0.1
	E	0.5
Q904	D	3.2
	G	4.9
	S	3.2
Q905	D	3.2
	G	4.9
	S	0
Q906	B	4.9
	C	0
	E	0

D1 BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC6101	1	3.4
	2	1.6
	3	0
	4	0
	5	2.1
	6	0
	7	2.6
	8	5.0
IC6102	1	8.8
	2	4.3
	3	4.4
	4	4.9
	5	0
	6	1.6
	7	1.7
	8	4.8
IC6103	1	8.8
	2	3.1
	3	3.4
	4	1.9
	5	0
	6	1.7
	7	1.7
	8	3.4
IC6104	1	1.9
	2	2.1
	3	-15.8
	4	1.4
	5	6.9
IC6105	1	6.6
	2	4.2
	3	4.4
	4	0
	5	1.3
	6	1.3
	7	0.2
	8	8.8
IC6106	1	0
	2	0
	3	8.9
IC6108	1	2.7
	2	4.9
	3	0.3
	4	4.7
	5	3.6
	6	1.9
	7	1.8
	8	2.9
	9	1.2
	10	0.5
	11	1.6
	12	2.3
	13	5.0
	14	0
	15	5.0
	16	5.0
	17	5.0
	18	0
	19	0
	20	4.1
	21	4.5
	22	5.0
	23	0
	24	0
IC6351	1	8.8
	2	0.3
	3	4.4
	4	3.8
	5	0
	6	4.6
	7	4.2
	8	5.1
IC6353	I	12.4
	G	0
	O	5.0
IC6354	1	4.4
	2	0
	3	8.8
	4	0
	5	4.4
	6	4.4
	7	0
	8	3.9
IC6356	1	-3.4
	2	-3.4
	3	-3.2
	4	-3.3
	5	-15.9
	6	0
	7	-3.3
	8	-3.2
	9	-3.3
	10	11.9
Q6103	B	4.1
	C	4.2
	E	0
Q6104	B	5.2
	C	0.5
	E	0
Q6105	B	5.0
	C	3.4
	E	2.9
Q6106	B	-3.3
	C	3.1
	E	0
Q6107	B	12.4
	C	12.0
	E	5.8
Q6118	B	3.4
	C	0
	E	0
Q6125	B	8.8
	C	2.1
	E	2.2
Q6126	B	0
	C	2.2
	E	2.1
Q6128	B	8.8
	C	1.4
	E	3.2
Q6201	B	4.5
	C	0.4
	E	0
Q6202	B	2.8
	C	0.7
	E	0
Q6350	B	1.7
	C	0.4
	E	0
Q6356	B	1.8
	C	0.3
	E	0
Q6405	B	0
	C	4.4
	E	3.8
Q6455	B	8.8
	C	1.7
	E	1.1

C BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC9001	1	<[0]>(3.4)
	2	<[0]>(11.7)
	3	<[0]>(3.3)
	4	0
	5	<[0]>(8.8)
	6	<[0.1]>(200)
	7	<[0.8]>(14.7)
	8	<[0.5]>(15.6)
	9	<[1.0]>(14.7)
IC9002	1	<[0]>(3.4)
	2	<[0]>(11.7)
	3	<[0]>(3.3)
	4	0
	5	<[0]>(8.8)
	6	<[0.1]>(200)
	7	<[1.2]>(128)
	8	<[0]>(153.5)
	9	<[0]>(128)
IC9003	1	<[0]>(3.4)
	2	<[0]>(11.7)
	3	<[0]>(3.3)
	4	0
	5	<[0]>(8.9)
	6	<[0.1]>(200)
	7	<[1.2]>(138.6)
	8	<[0.6]>(152.4)
	9	<[1.6]>(138.6)
J9001	5	317
	7	0
	8	0
	10	152.0
	11	153.6
	12	157.0
Q9001	B	0
	C	<[0]>(4.5)
	E	<[0]>(8.2)
Q9009	B	0
	C	0
	E	<[0]>(2.9)
Q9010	B	0
	C	0
	E	<[0]>(3.4)
Q9011	B	0
	C	<[0]>(3.8)
	E	<[0]>(3.2)

D BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC6602	1	0
	2	6.0
	3	4.2
	4	0.0
	5	18.6
	6	0.0
	7	6.2
	8	4.0
IC6603	1	276
	2	127
	3	4.3
	4	0.4
	5	4.8
	6	2.2
	7	3.7
	8	3.7
	9	0
	10	0
	11	0
	12	0
	13	0
	14	18.5
	15	10.9
	16	4.9
	17	0.1
	18	133
	19	123
IC6604	1	0
	2	0
	3	0
	4	5.8
	5	269
	6	✻
	7	0
	8	0
IC6606	I	9.6
	G	0
	O	5.0
IC6804	I	12.2
	G	0
	O	8.8
IC6805	I	14.6
	G	0
	O	11.9
IC6806	I	8.1
	G	0
	VC	6.2
	O	21.2
IC6607	1	134
	2	2.4
	3	10.7
	4	0
IC6608	1	18.5
	2	2.9
	3	4.9
	4	0.0
	5	18.6
	6	0.0
	7	3.1
	8	2.3
IC6800	1	1.3
	2	14.0
	3	-13.1
	4	-15.8
	5	-0.5
	6	14.6
	7	1.3
IC6801	1	6.6
	2	1.4
	3	2.2
	4	0
	5	2.9
	6	6.6
	7	0.2
	8	8.8
Q6602	B	0.3
	C	12.0
	E	0.0
Q6603	B	11.2
	C	11.9
	E	12.0
Q6604	B	17.7
	C	18.4
	E	18.6
Q6605	B	0.7
	C	0.0
	E	0.0
Q6606	B	17.9
	C	18.5
	E	18.6
Q6609	B	5.0
	C	5.0
	E	0
Q6610	B	0.5
	C	5.0
	E	0.2
Q6611	B	0
	C	2.9
	E	0
Q6612	B	2.9
	C	0
	E	0
Q6613	B	0
	C	4.1
	E	0
Q6614	B	0
	C	-75.6
	E	0
Q6615	B	0.4
	C	18.6
	E	0.0
Q6800	B	14.6
	C	0.3
	E	0.9
Q6801	B	0.2
	C	11.1
	E	-0.5
Q6802	B	203
	C	136
	E	136
Q6803	B	6.6
	C	0
	E	6.5
Q6804	B	6.6
	C	8.8
	E	6.5
Q6805	B	77.5
	C	-0.3
	E	0
Q6806	B	-0.3
	C	65.2
	E	0
Q6807	B	-0
	C	242
	E	242
Q6808	B	240
	C	240
	E	240
Q6809	B	8.3
	C	3.4
	E	0
Q6810	B	135
	C	0
	E	0
Q6811	B	8.8
	C	-0
	E	-0
Q6812	B	-0.8
	C	8.6
	E	0
Q6813	B	5.8
	C	0.4
	E	0
Q6814	B	2.9
	C	8.8
	E	8.8
Q6815	B	135
	C	135
	E	134
Q6816	B	0.5
	C	0
	E	0
Q6817	B	0.5
	C	0
	E	0
Q6818	B	0
	C	3.2
	E	0
Q6819	B	8.8
	C	-10.9
	E	-0
Q6820	B	0.1
	C	0.2
	E	0
Q6821	B	-10.9
	C	0
	E	-0.1

E BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC4301	1	3.7
	2	-0
	3	-0
	4	4.7
	5	3.4
	6	3.4
	7	7.6
	8	-0
	9	-0
	10	0.4
	11	1.7
	12	8.9
	13	-0
	14	5.0
	15	2.5
	16	0
	17	-0
	18	2.6
	19	4.1
	20	0
	21	6.0
	22	1.5
	23	5.3
	24	-0
	25	5.1
	26	2.6
	27	3.7
	28	2.8
	29	4.1
	30	2.4
	31	3.3
	32	8.9
	33	-0
	34	4.6
	35	4.7
	36	4.7
	37	8.9
	38	0
	39	4.8
	40	4.8
	41	4.8
	42	-0
	43	-0
	44	-0
	45	6.3
	46	8.9
	47	8.9
	48	5.2
	49	2.4
	50	3.9
	51	-0
	52	6.1
	53	5.8
	54	5.8
	55	-0
	56	5.8
	57	5.8
	58	5.8
	59	0.3
	60	0
	61	4.5
	62	4.1
	63	4.2
	64	3.5
IC4800	1	0.2
	2	4.4
	3	4.6
	4	0
	5	4.6
	6	3.2
	7	0.3
	8	8.9
IC4801	1	0.2
	2	4.5
	3	4.5
	4	0
	5	4.5
	6	3.2
	7	0.3
	8	8.9
IC4802	1	0
	2	4.4
	3	1.7
	4	1.7
	5	0
	6	4.3
	7	4.3
	8	4.9
IC4803	1	7.7
	2	*
	3	0.4
	4	0.0
	5	0.8
	6	0.7
	7	6.6
	8	8.9
Q4304	B	8.9
	C	6.9
	E	6.2
Q4307	B	-0
	C	3.0
	E	2.3
Q4308	B	-0
	C	3.4
	E	2.8
Q4310	B	-0
	C	3.2
	E	2.6
Q4315	B	0
	C	1.5
	E	0
Q4316	B	4.9
	C	0
	E	0
Q4317	B	0
	C	2.7
	E	0
Q4319	B	1.9
	C	6.9
	E	6.3
Q4800	B	-0
	C	-1.7
	E	-0
Q4801	B	3.2
	C	2.2
	E	0
Q4802	B	4.4
	C	1.7
	E	0
Q4803	B	8.9
	C	0
	E	4.7
Q4804	B	-0
	C	0.3
	E	-0
Q4805	B	-0
	C	0
	E	-0
Q4806	B	3.2
	C	0
	E	0
Q4807	B	4.2
	C	0.2
	E	-0
Q4808	B	-0
	C	2.0
	E	3.2
Q4809	B	-0
	C	2.0
	E	3.1
Q4810	B	8.9
	C	-0.1
	E	-0.1
Q4811	B	8.9
	C	0
	E	0.3
Q4812	B	1.4
	C	-0
	E	-0
Q4813	B	0
	C	0.5
	E	1.2
Q4814	B	0
	C	1.5
	E	1.6
Q4815	B	0
	C	1.5
	E	0
Q4816	B	-0
	C	0.6
	E	0
Q4817	B	0
	C	2.5
	E	2.2

J(1/2) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]
IC8302	1	0.3
	2	0.8
	3	0.3
	4	0.8
	5	0.8
	6	-3.3
	7	1.3
	8	0.3
	9	0
	10	0.9
	11	0.8
	12	0.8
	13	-3.3
	14	1.3
	15	0.3
	16	0
	17	0.9
	18	0
	19	0.8
	20	-3.3
	21	1.3
	22	0.3
	24	0.3
	25	0.8
	26	0.8
	27	-3.3
	28	1.3
	29	0.8
	30	1.0
	31	0
	32	-3.6
	33	0.8
	34	*
	35	-3.6
	36	0.2
	37	0.8
	38	0.8
	39	0.1
	40	0.8
	41	1.7
	42	5.4
	43	0.8
	44	0.6
	47	0.8
	48	-3.6
	49	1.1
	50	0.8
	51	0.8
	52	0.8
	53	0.7
	54	0.1
	55	0.1
	56	-0.3
	57	-3.6
	58	0.7
	59	0.8
	60	1.1
	61	0.8
	62	0.8
	63	0.6
	64	0.8
IC8304	I	5.0
	G	0
	O	0
IC8305	I	9.0
	G	0
	O	12.3

Ref	Pin No	Voltage[v]
IC8306	1	-1.3
	2	-1.6
	3	-2.2
	4	-3.4
	5	-1.2
	6	1.3
	7	-1.0
	8	-3.6
	9	-3.2
	10	-2.8
	11	-1.2
	12	1.3
	13	0.9
	14	0.8
	15	0
	16	0
	17	0
	18	0
	19	-2.2
	20	-1.1
	21	-1.9
	22	-1.7
	23	1.8
	24	-3.6
	25	-0.8
	26	0.9
	27	-0.8
	28	-3.6
	29	-0.8
	30	-0.8
	31	-1.6
	32	1.3
	33	-0.8
	34	-0.7
	35	-0.7
	36	-3.6
	37	-2.5
	38	0.3
	39	1.7
	40	3.2
	41	2.2
	42	0
	43	1.7
	44	2.2
	45	4.9
	46	2.3
	47	3.7
	48	1.7
IC8308	1	0.8
	2	-1.0
	3	-1.2
	4	-3.4
	5	1.3
	6	0
	7	-1.0
	8	-3.6
	9	3.2
	10	0.7
	11	-0.5
	12	0
	13	1.3
	14	0
	15	-3.6
	16	-3.6
	17	-1.1
	18	-1.1
	19	-2.2

Ref	Pin No	Voltage[v]
	20	-1.2
	21	-1.6
	22	0
	23	-1.7
	24	0
	25	-0.7
	26	-0.8
	27	-0.7
	28	-3.6
	29	[
	30	-0.7
	31	-1.5
	32	1.3
	33	0.6
	34	-0.6
	35	-0.6
	36	0
	37	-2.5
	38	0.3
	39	1.9
	40	-0.2
	41	-0.2
	42	1.0
	43	-1.9
	44	-1.7
	45	1.1
	46	-0.7
	47	-0.7
	48	1.8
IC8309	1	0.5
	2	0
	3	-0.8
	4	0
	5	0
	6	0
	7	0
	8	0
IC8310	1	-2.8
	2	-3.6
	3	-0
	4	-0
	5	-0
	6	-1.5
	7	-3.6
	8	1.4
	9	2.1
	10	-3.6
	11	[
	12	-3.6
	13	-3.6
	14	0.8
	15	1.4
	16	-0.9
	17	-0.8
	18	-3.6
	19	-0.5
	20	4.6
	21	-1.1
	22	0
	23	-3.6
	24	-3.6
IC8312	1	-3.6
	2	-3.2
	3	1.3
	4	1.3
	5	-3.2

J(2/2) BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
Q8302	B	5.4	Q8328	E	-3.6	Q8343	C	0.9
	C	0.8		B	1.8		E	0
	E	0.2		C	-3.4		B	0.7
Q8303	B	5.4		E	-3.6		C	0
	C	0.6	Q8329	B	2.0		E	4.8
	E	0		C	-1.1	Q8346	B	0
Q8304	B	5.4		E	-1.8		C	5.4
	C	0.6	Q8330	B	5.4		E	4.7
	E	0		C	2.0	Q8347	B	4.7
Q8306	B	5.4		E	1.4		C	0
	C	1.7	Q8331	B	2.7		E	-1.1
	E	1.1		C	-1.8	Q8348	B	0
Q8308	B	5.4		E	-0		C	0
	C	0.1	Q8332	B	5.4		E	0
	E	0.4		C	2.7	Q8349	B	4.7
Q8309	B	5.4		E	2.1		C	-0.5
	C	0.8	Q8333	B	2.0		E	-1.1
	E	0.2		C	1.5	Q8350	B	0.7
Q8310	B	-0		E	2.1		C	0
	C	-3.5	Q8334	B	5.4		E	0
	E	-3.5		C	2.9	Q8351	B	4.7
Q8325	B	5.4		E	2.2		C	-0.9
	C	0	Q8335	B	2.0		E	1.5
	E	0		C	1.5	Q8352	B	0
Q8326	B	-0		E	2.2		C	5.4
	C	-3.3	Q8336	B	5.4		E	4.7
	E	0		C	2.9	Q8355	B	5.4
Q8327	B	-3.4		E	2.3		C	0.1
	C	0	Q8342	B	4.8		E	0.4

DH BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
IC3805	1	3.4	Q3807	B	0
	2	4.1		C	5.0
	3	2.8		E	0
	4	2.8	Q3808	B	5.0
	5	0		C	0
	6	0		E	0
	7	2.8	Q3809	B	0
	8	2.8		C	2.0
	9	2.4		E	2.8
	10	6.7	Q3810	B	2.5
IC3807	1	12.2		C	0
	2	0		E	3.2
	3	2.5	Q3811	B	3.2
	4	2.2		C	6.8
	6	0		E	2.5
	7	5.4	Q3812	B	0
	8	0		C	2.0
				E	2.8

VM BOARD VOLTAGE LIST

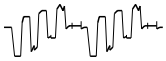
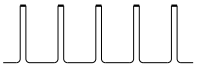
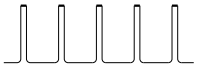
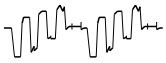
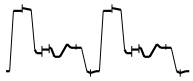
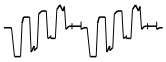
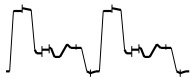
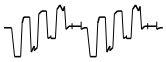
Ref	Pin No	Voltage[v]
Q5400	B	1.9
	C	8
	E	1.2
Q5401	B	5.0
	C	2.0
	E	1.4
Q5402	B	5.5
	C	8.8
	E	5.8
Q5403	B	5.9
	C	8.9
	E	5.7
Q5404	B	5.0
	C	0
	E	5.5
Q5405	B	5.5
	C	0
	E	5.7
Q5406	B	1.3
	C	0.7
	E	0.9
Q5407	B	134
	C	57
	E	134

V BOARD VOLTAGE LIST

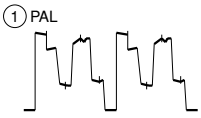
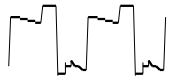
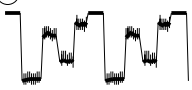
Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
IC1801	1	0		32	0
	2	0.1		33	0
	3	4.9		34	0
	4	4.9		35	0
	5	0.1		36	4.3
	6	0.1		37	4.9
	7	0.1		38	4.6
	8	0.1		39	4.6
	9	0.1		40	4.9
	10	0		41	4.9
	11	4.9		42	4.9
	12	2.3		43	4.0
	13	2.5		44	4.4
	14	2.3		45	0.2
	15	4.8		46	0
	16	4.9		47	0
	17	4.9		48	0
	18	4.9		49	0
	19	4.9		50	0
	20	4.9		51	4.9
	21	4.9		52	4.9
	22	2.9	IC1802	I	0
	23	4.9		G	6.8
	24	0		O	4.9
	25	2.3	Q1802	B	4.9
	26	4.9		C	0.2
	27	0		E	0.2
	28	4.9	Q1803	B	0
	29	4.9		C	0
	30	2.2		E	0
	31	0			

7-4. WAVEFORMS

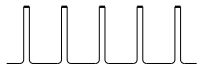
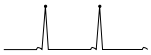
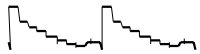
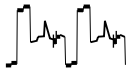
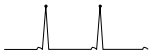
B3 BOARD WAVEFORMS

① 1.7Vp-p (H)	② 1.0Vp-p (H)	③  1.1Vp-p (H)	④ 4.7Vp-p (V)	⑤ 4.9Vp-p (V)
⑥ 2.3Vp-p (V)	⑦  2.2Vp-p (V)	⑧  2.8Vp-p (V)	⑨ 3.1Vp-p (V)	⑩  0.6Vp-p (H)
⑪  0.6Vp-p (H)	⑫ 1.0Vp-p (H)	⑬ 3.5Vp-p (V)	⑭ 0.9Vp-p (H)	⑮  0.6Vp-p (H)
⑯  0.5Vp-p (H)	⑰ 3.7Vp-p (V)	⑱  0.6Vp-p	⑲ 0.1Vp-p (H)	⑳ 0.6Vp-p

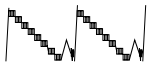
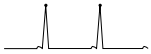
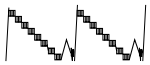
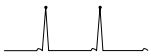
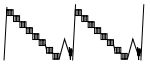
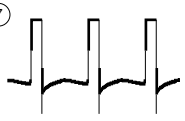
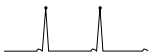
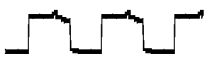
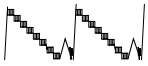
C BOARD WAVEFORMS

① PAL  118Vp-p (H)	① SECAM/NTSC 118Vp-p (H)	②  117Vp-p (H)	③ 123Vp-p (H)	④ 23.2Vp-p (H)
⑤ 4.5Vp-p (H)	⑥  4.4Vp-p (H)	⑦ 4.4Vp-p (H)		

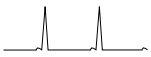
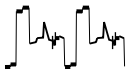
A BOARD WAVEFORMS

① 5.0Vp-p (V)	② 4.0Vp-p (V)	③ 0.2Vp-p (V)	④ 0.2Vp-p (V)	⑤ 0.2Vp-p (V)
⑥  5.0Vp-p (V)	⑦  5.1Vp-p (H)	⑧  2.6Vp-p (H)	⑨ 2.9Vp-p (H)	⑩  2.3Vp-p (H)
⑪  4.8Vp-p (H)	⑫ 4.9Vp-p (V)			

D BOARD WAVEFORMS

①  0.7Vp-p (H)	②  28.8Vp-p (H)
③  0.9Vp-p (H)	④  108Vp-p (H)
⑤  2.4Vp-p (H)	⑥ 222Vp-p
⑦  52.4Vp-p (H)	⑧  6.7Vp-p (H)
⑨  3.8Vp-p (H)	⑩  1.7Vp-p (H)
⑪ 7.8Vp-p (H)	

D1 BOARD WAVEFORMS

①  80Vp-p (H)	②  0.5Vp-p
③ 294Vp-p	④ 8.8Vp-p

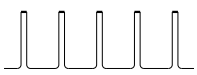
E BOARD WAVEFORMS

① 1.5Vp-p (V)	② 1.4Vp-p (V)	③ 5.0Vp-p (V)	④ 2.4Vp-p	⑤ 2.4Vp-p
⑥ 2.4Vp-p (H)	⑦ 7.3Vp-p (V)			

J BOARD WAVEFORMS

① 1.3Vp-p (H)	② 2.6Vp-p (H)	③ 1.6Vp-p (H)	④ 1.7Vp-p (H)	⑤ 1.4Vp-p
⑥ 1.4Vp-p (H)	⑦ 1.0Vp-p (H)	⑧ 1.4Vp-p (H)	⑨ 0.3Vp-p (H)	⑩ 0.5Vp-p (H)
⑪ 0.5Vp-p (H)	⑫ 0.5Vp-p (H)	⑬ 0.4Vp-p (H)	⑭ 2.1Vp-p (H)	

V BOARD WAVEFORMS

①  3.9Vp-p (V)	② 4.6Vp-p (V)

MEMO

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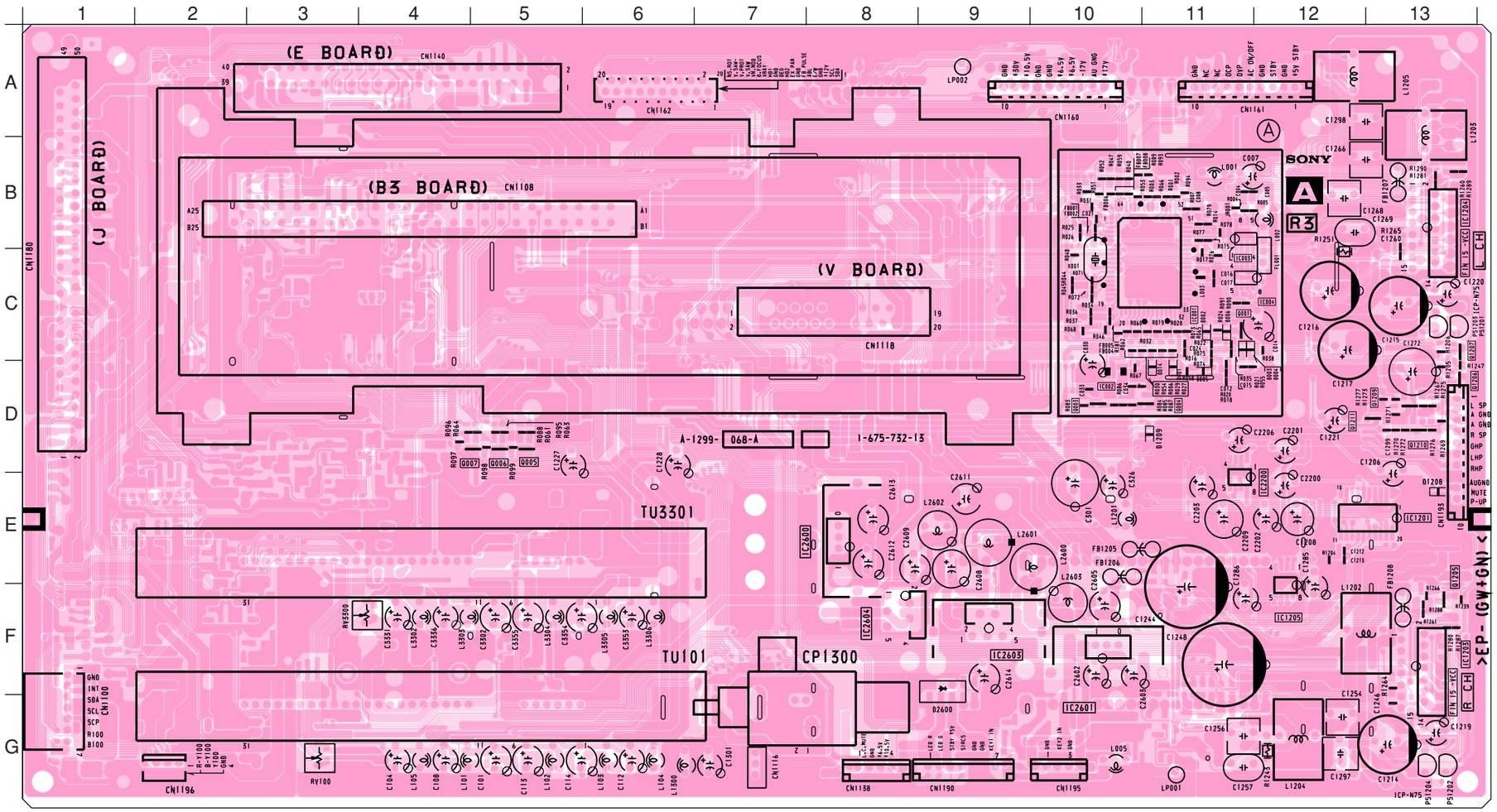
7-5. PRINTED WIRING BOARDS AND PARTS LOCATION BOARDS

PRINTED WIRING BOARDS

A [MAIN-MICON, TUVIF, AUDIO AMP]

– A Board (Component Side) –



A BOARD (Component Side)

IC	
IC001	C-11
IC002	D-10
IC003	C-11
IC004	C-12
IC1201	E-13
IC1203	F-13
IC1204	B-13
IC1205	F-12
IC2200	E12
IC2600	E-8
IC2601	G-10
IC2603	F-9
IC2604	F-8
TRANSISTOR	
Q001	C-11
Q003	D-10
Q004	D-11
Q005	D-5
Q006	D-5
Q007	D-4
Q1206	D-13
Q1207	C-13
Q1209	D-13
Q1210	D-13
Q1211	D-12
DIODE	
D003	D-12
D004	D-12
D014	D-11
D1208	E-13
D1209	D-11
D2600	G-9

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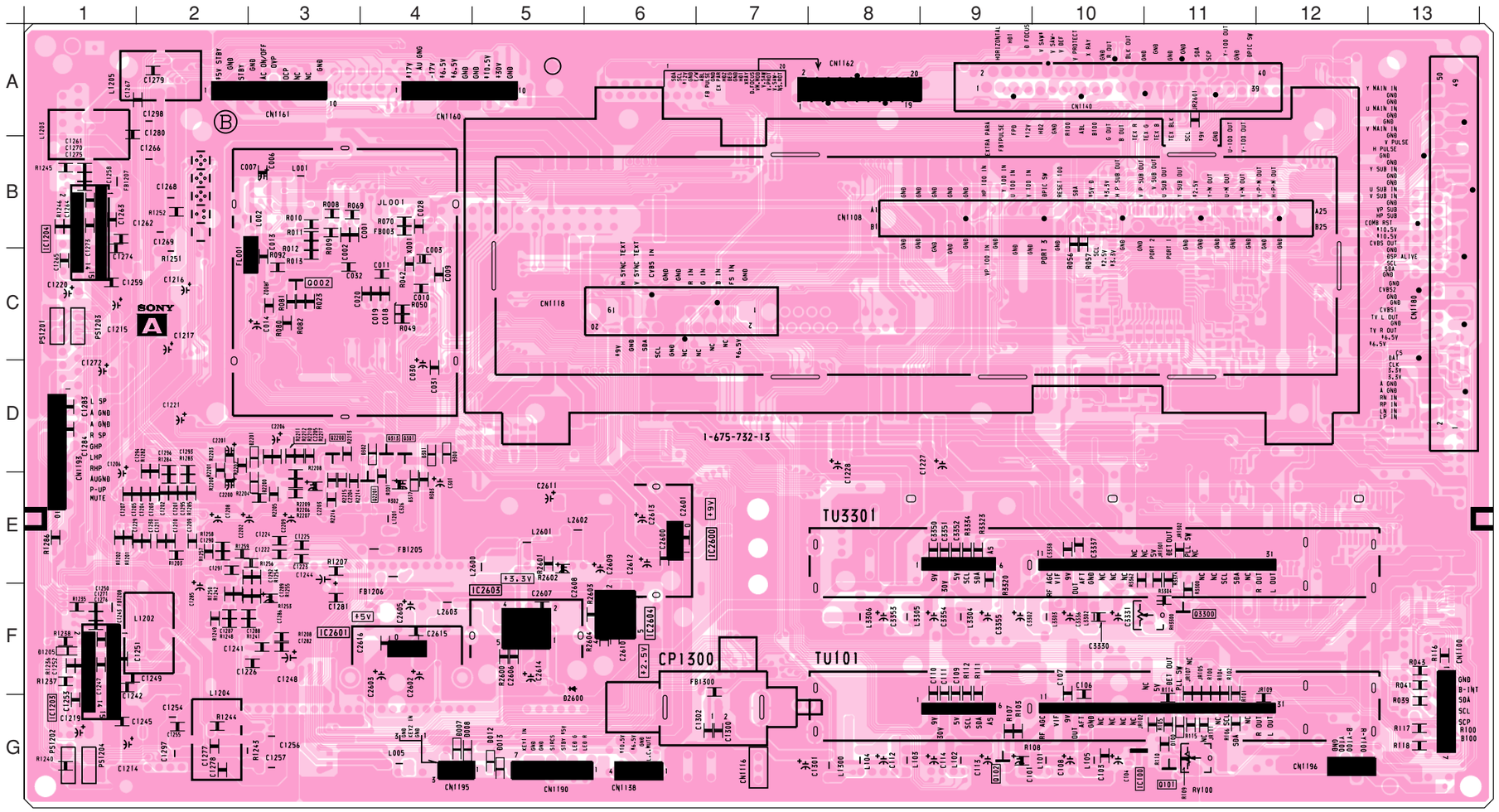
PRINTED WIRING BOARDS

A [MAIN-MICON, TUVIF, AUDIO AMP]

– A Board (Conductor Side) –



A BOARD

IC	
IC100	G-10
IC1203	G-1
IC1204	B-1
IC2601	F-3
IC2603	F-5
TRANSISTOR	
Q101	G-11
Q102	G-9
Q301	D-4
Q313	D-4
Q2200	D-3
Q2201	E-4
Q3300	F-11
DIODE	
D007	G-4
D008	G-4
D012	G-5
D013	G-5
D100	G-11
D302	D-3
D317	E-4
D1205	F-1
D2200	E-3
D2201	D-2

- :Pattern from the side which enables seeing.
- :Pattern from the rear side.

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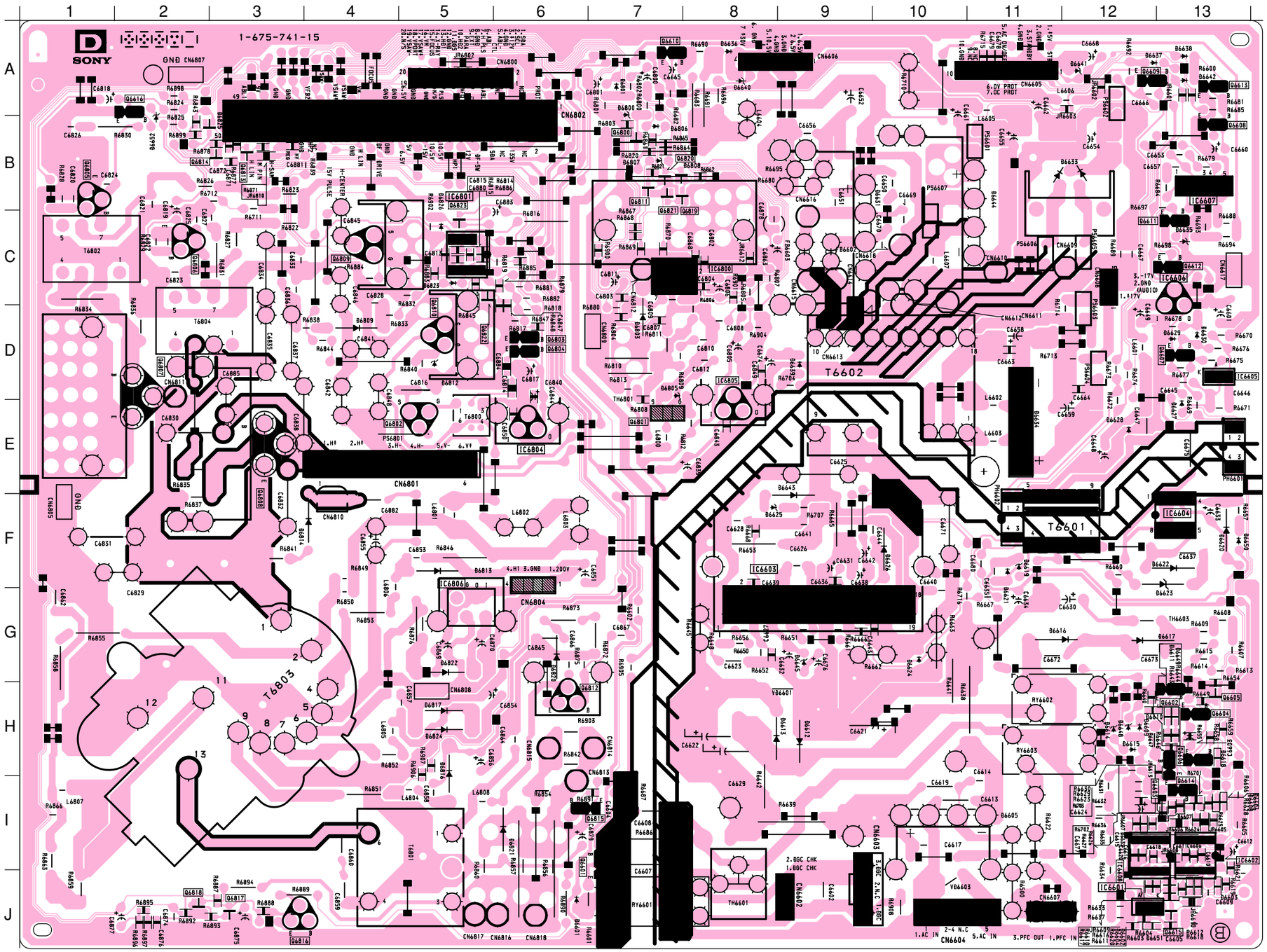
PRINTED WIRING BOARD

D [POWER SUPPLY DEFLECTION HV]

– D Board –



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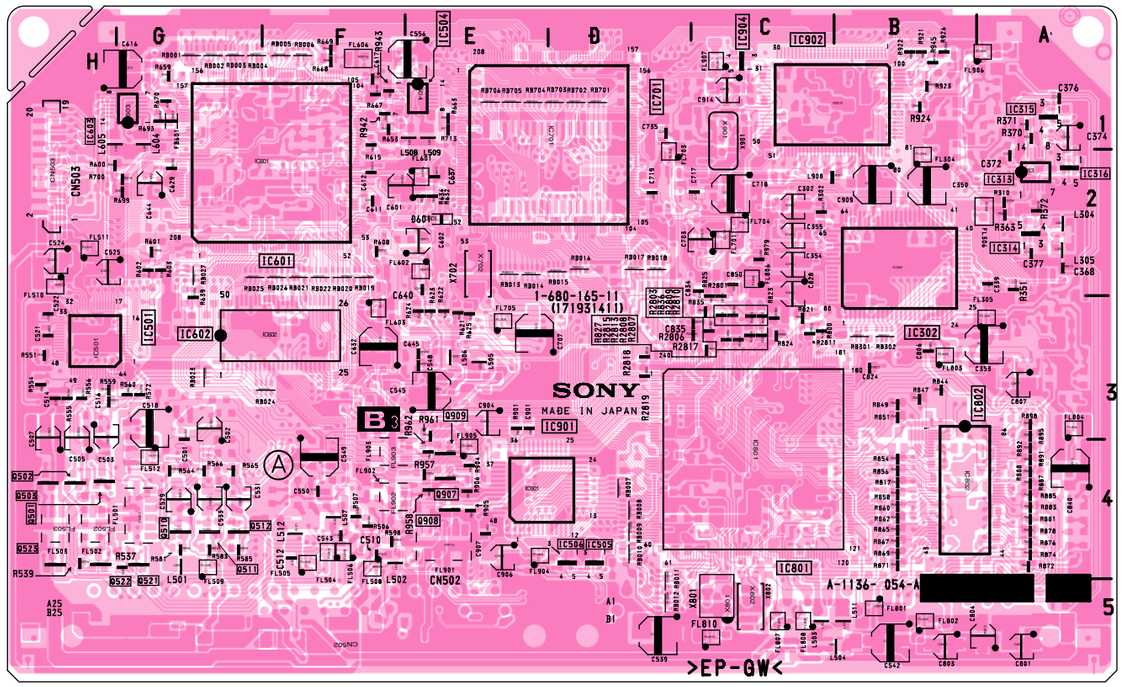
PRINTED WIRING BOARD

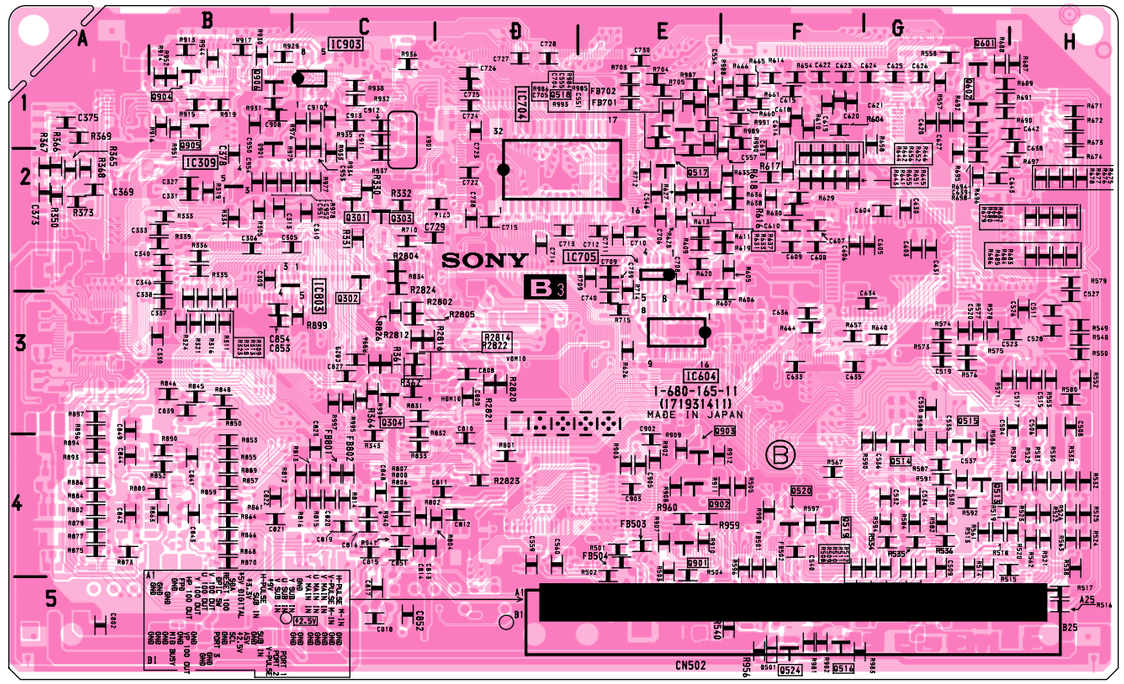
B3 [DRC, MID, DRC/MID CONTROLLER]

D1 [DF, DQP DRIVE]

– B3 Board (Component Side) –

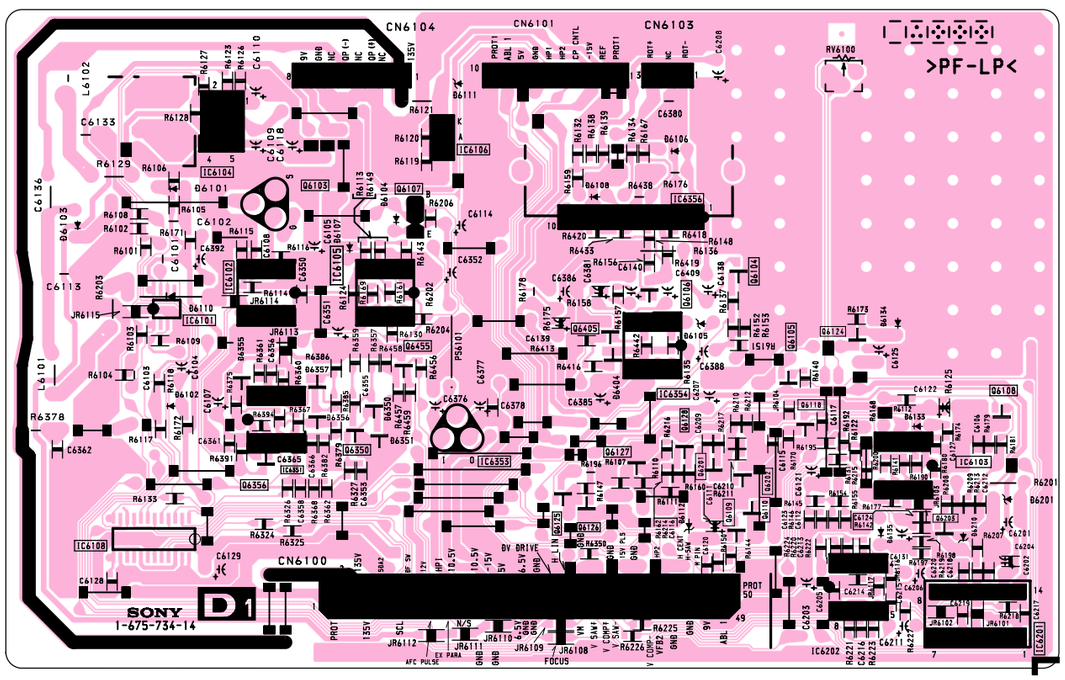


– B3 Board (Conductor Side) –



- :Pattern from the side which enables seeing.
- :Pattern from the rear side.

– D1 Board –



B3 BOARD (Conductor Side)

IC		Q519	D-6
IC304	A-1	Q520	D-6
IC309	B-2	Q524	E-6
IC311	C-1	Q601	A-7
IC604	C-5	Q602	A-7
IC704	A-4	Q901	D-5
IC705	B-4	Q902	D-5
IC803	C-3	Q903	C-6
IC903	A-3	Q904	A-2
TRANSISTOR		Q905	A-2
Q513	D-7	Q906	A-2
Q514	D-7	DIODE	
Q515	C-7	D301	A-7
Q516	E-6	D302	B-5
Q517	B-5	D901	B-11
Q518	A-4		

B3 BOARD (Component Side)

IC		TRANSISTOR	
IC302	C-7	Q501	D-6
IC303	B-8	Q502	E-7
IC305	B-7	Q503	F-6
IC306	B-8	Q510	D-2
IC307	A-7	Q511	F-1
IC308	A-7	Q512	D-2
IC310	A-7	Q521	E-2
IC311	C-8	Q522	E-1
IC501	C-1	Q523	D-1
IC504	A-4	Q907	D-4
IC505	D-5	Q908	D-3
IC506	D-4	Q909	C-4
IC601	I-8	DIODE	
IC602	H-6	D601	I-8
IC603	D-8		
IC701	A-5		
IC801	E-6		
IC802	C-7		
IC901	I-13		
IC902	A-6		
IC904	A-6		

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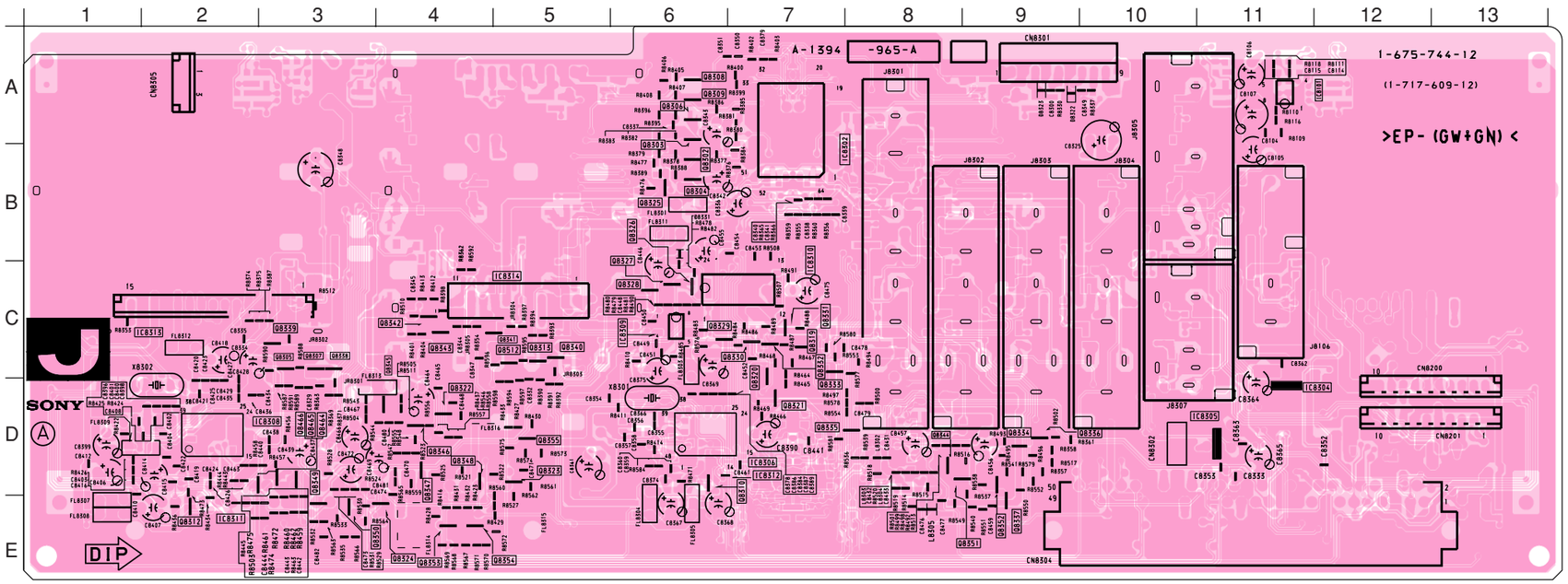
PRINTED WIRING BOARD

J [YCT, COMB FILTER, VIDEO/AUDIO-IN/OUT]

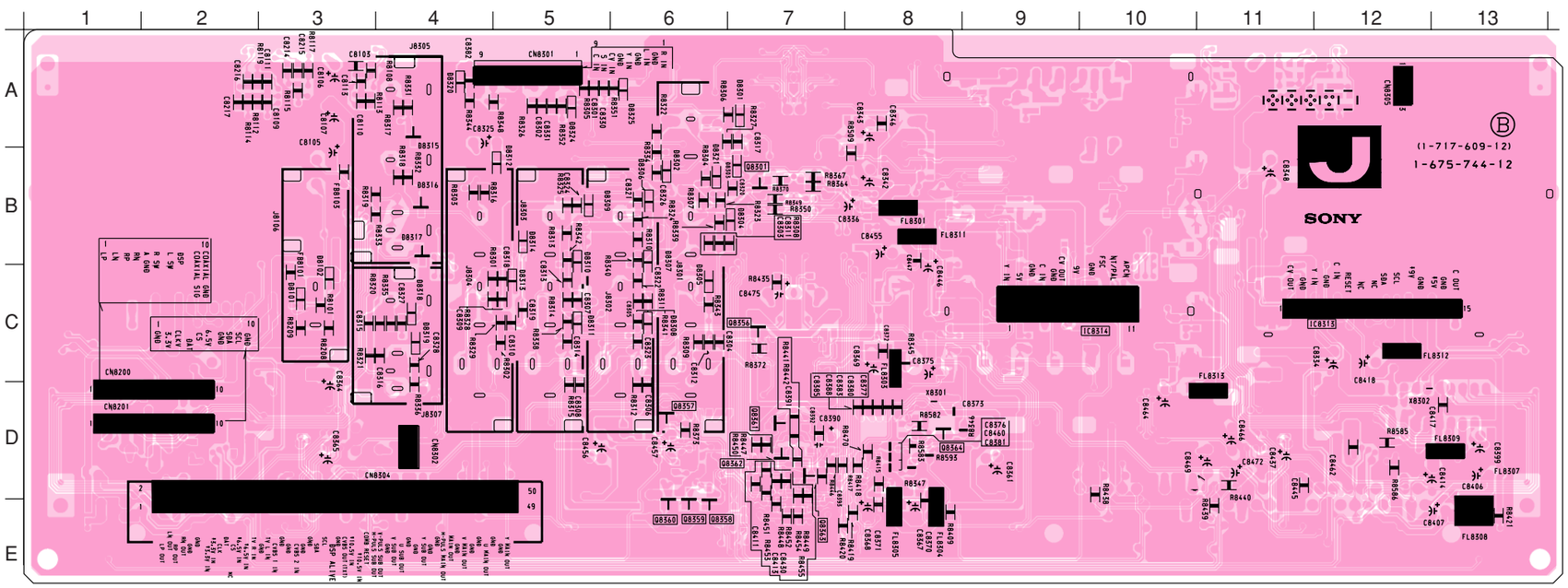
– J Board (Component Side) –



J BOARD (Component Side)

IC		Q8307	C-3	Q8339	C-3
		Q8308	A-6	Q8340	C-5
IC0302	A-8	Q8309	A-6	Q8341	C-5
IC8101	A-12	Q8310	D-7	Q8342	C-4
IC8102	E-13	Q8312	E-3	Q8343	C-4
IC8103	B-13	Q8313	C-5	Q8344	D-8
IC8105	A-13	Q8319	C-7	Q8345	C-3
IC8106	C-12	Q8320	C-7	Q8346	D-4
IC8107	D-12	Q8321	D-7	Q8347	D-4
IC8304	D-12	Q8322	D-4	Q8348	D-5
IC8305	D-11	Q8323	D-5	Q8349	E-3
IC8306	D-7	Q8324	D-4	Q8350	D-4
IC8308	D-2	Q8325	B-6	Q8351	D-9
IC8309	C-6	Q8326	B-6	Q8352	E-9
IC8310	B-7	Q8327	B-6	Q8353	E-5
IC8311	E-3	Q8328	C-6	Q8354	E-5
IC8312	D-7	Q8329	C-7	Q8355	D-5
IC8313	C-2	Q8330	C-7		
IC8314	B-5	Q8331	C-7		
TRANSISTOR		Q8332	C-7		
		Q8333	C-7		
Q8302	A-6	Q8334	D-9		
Q8303	A-6	Q8335	D-7		
Q8304	B-6	Q8336	D10		
Q8305	C-3	Q8337	E-9		
Q8306	A-6	Q8338	C-3		

– J Board (Conductor Side) –



J BOARD (Conductor Side)

IC		D8302	B-6
		D8303	B-7
IC8104	B-2	D8304	B-7
IC8313	C-12	D8305	C-6
IC8314	C-10	D8306	B-6
TRANSISTOR		D8307	B-6
		D8308	C-6
Q8301	B-7	D8309	B-6
Q8356	C-7	D8310	B-5
Q8357	D-6	D8311	C-5
Q8358	E-7	D8313	C-5
Q8359	E-6	D8314	B-5
Q8360	E-6	D8315	A-4
DIODE		D8316	B-4
		D8317	B-4
D8101	C-3	D8318	C-4
D8102	C-3	D8319	C-4
D8301	A-4	D8320	A-4
		D8321	B-6
		D8325	A-4

- :Pattern from the side which enables seeing.
- :Pattern from the rear side.

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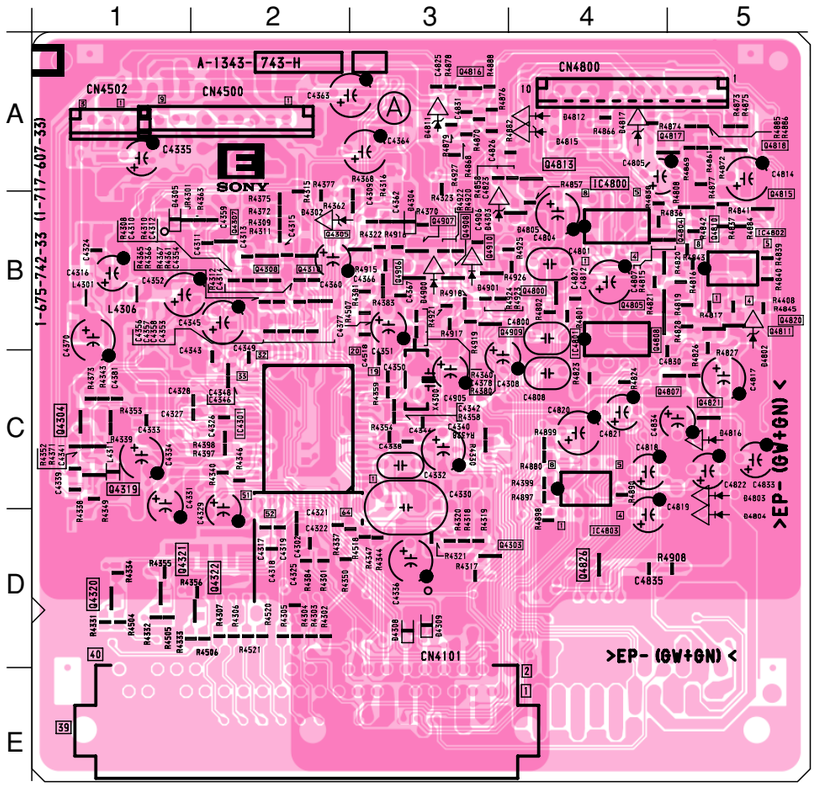
PRINTED WIRING BOARD

E [RGB OUT, DEFLECTION]

A1 [AUDIO DSP]

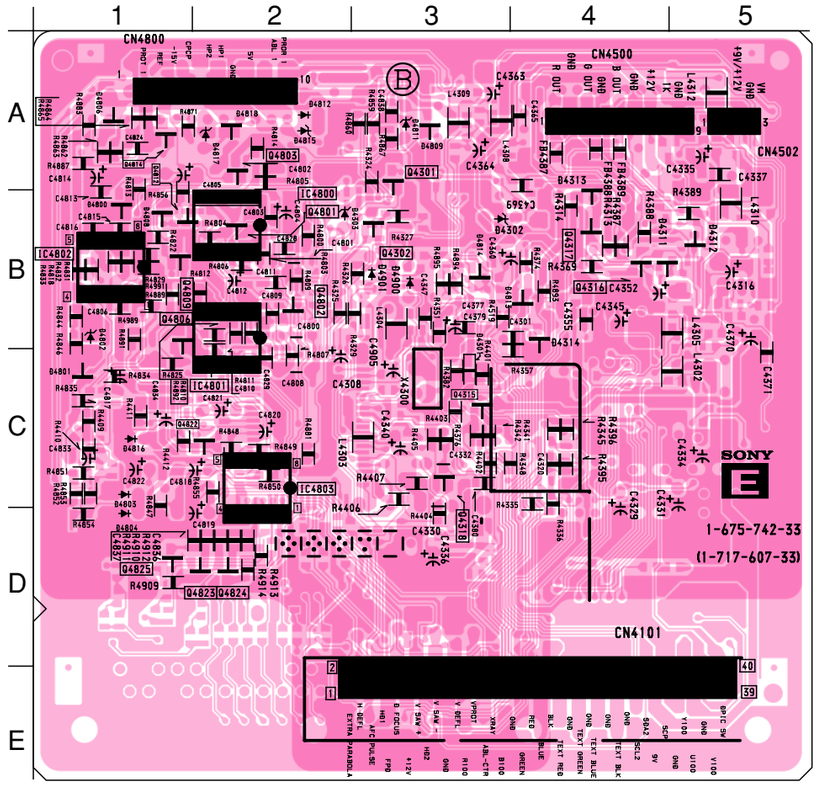
– E Board (Component Side) –



J BOARD (Component Side)

IC		Q4818	A-5
IC4301	C-2	Q4820	B-5
IC4800	A-4	Q4821	C-5
IC4801	C-4	Q4826	D-4
IC4802	B-5	Q4906	B-3
IC4803	D-4	Q4907	B-3
TRANSISTOR		Q4908	B-3
Q4303	D-3	Q4909	B-3
Q4304	C-1	Q4910	B-3
Q4305	B-2	Q4808	B-4
Q4307	B-2	**DIODE**	
Q4308	B-2	D4302	B-2
Q4310	B-2	D4303	B-3
Q4319	C-1	D4304	B-3
Q4320	D-1	D4305	B-1
Q4321	D-1	D4308	D-3
Q4322	D-2	D4309	D-3
Q4800	B-4	D4802	C-5
Q4804	B-5	D4803	C-5
Q4805	B-4	D4804	D-5
Q4807	C-5	D4805	B-4
Q4810	B-5	D4811	A-3
Q4811	B-5	D4812	A-4
Q4813	A-4	D4815	A-4
Q4815	B-5	D4816	C-5
Q4816	A-3	D4817	A-4
Q4817	A-4	D4900	B-3
		D4901	B-3

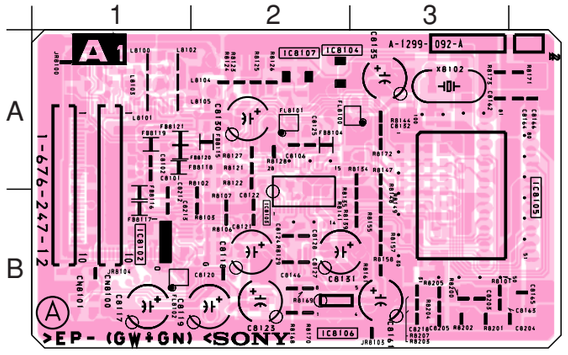
– E Board (Conductor Side) –



J BOARD (Conductor Side)

IC		DIODE	
IC4800	B-2	D4301	C-3
IC4801	C-2	D4302	B-3
IC4802	B-1	D4303	B-2
IC4803	C-2	D4311	B-4
TRANSISTOR		D4312	B-5
		D4313	A-4
		D4314	C-4
Q4301	A-3	D4800	B-1
Q4302	B-3	D4801	C-1
Q4315	C-3	D4802	B-1
Q4316	B-4	D4803	C-1
Q4317	B-4	D4804	D-1
Q4318	D-3	D4806	A-1
Q4801	B-2	D4808	B-1
Q4802	B-2	D4809	A-3
Q4803	A-2	D4811	A-3
Q4806	B-1	D4812	A-2
Q4809	B-1	D4813	B-3
Q4812	A-1	D4814	B-3
Q4814	A-1	D4815	A-2
Q4822	C-1	D4816	C-1
Q4823	D-1	D4817	A-2
Q4824	D-2	D4818	A-2
Q4825	D-1	D4900	B-3
		D4901	B-3

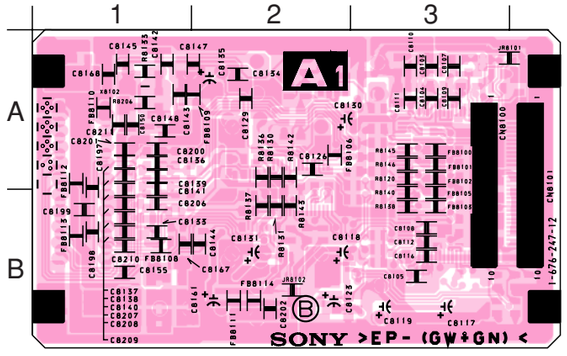
– A1 Board (Component Side) –



A1 BOARD (Component Side)

IC	
IC8102	B-1
IC8104	A-2
IC8105	B-4
IC8106	B-3
IC8108	B-1

– A1 Board (Conductor Side) –



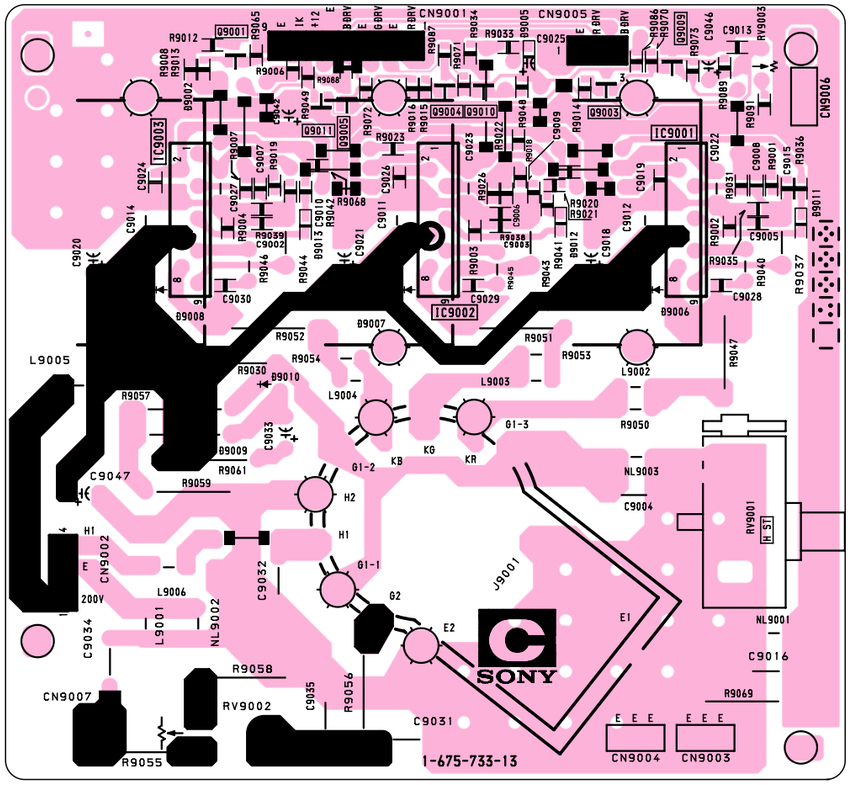
- :Pattern from the side which enables seeing.
- :Pattern from the rear side.

KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

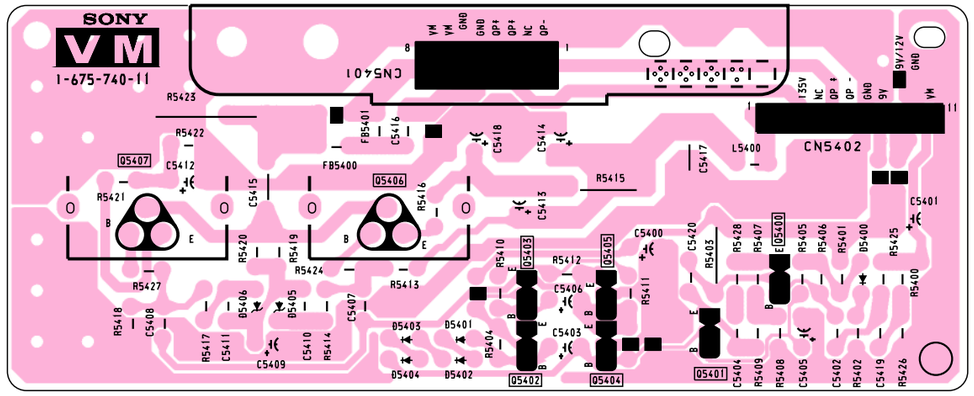
PRINTED WIRING BOARDS

C [CRT DRIVE] **F1** [AC LINE FILTER] **VM** [VM DRIVE] **H1** [LED, SIRCS RECEIVER] **H3** [TOP KEY] **SP** [SPEAKER CIRCUIT]

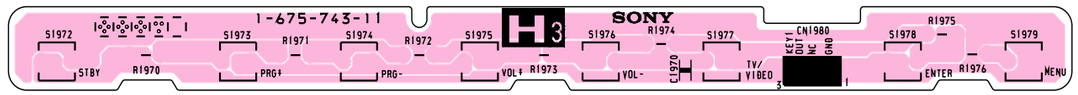
– C Board –



– VM Board –

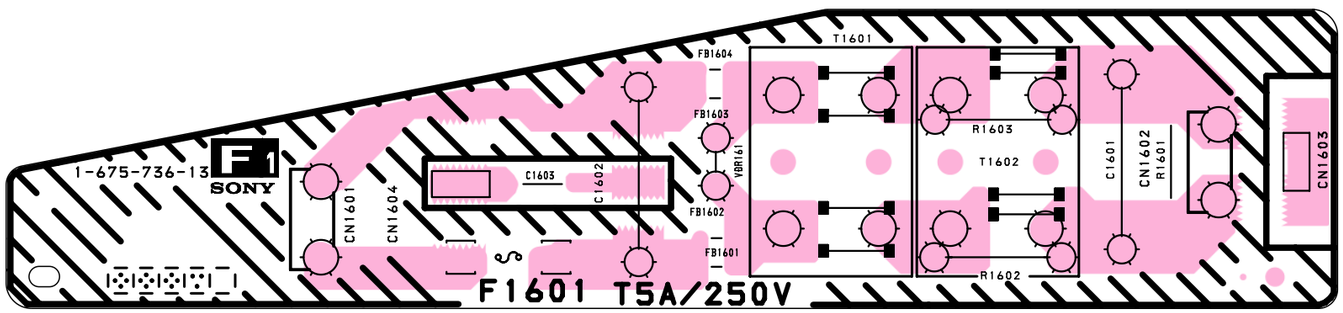


– H3 Board –

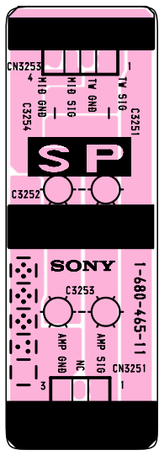


– H1 Board –

– F1 Board –



– SP Board –



KV-ES38M31/ES38M61/ES38M90/ES38M91
RM-916

PRINTED WIRING BOARDS

BC4 [Y/C SEP]

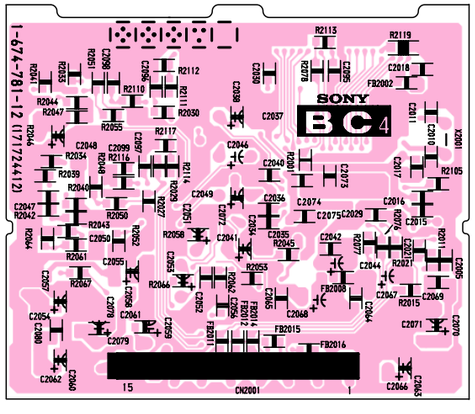
DH [MAGNETIC FIELD CORRECTION]

V [TELETEXT] (KV-ES38M31/M61/M91)

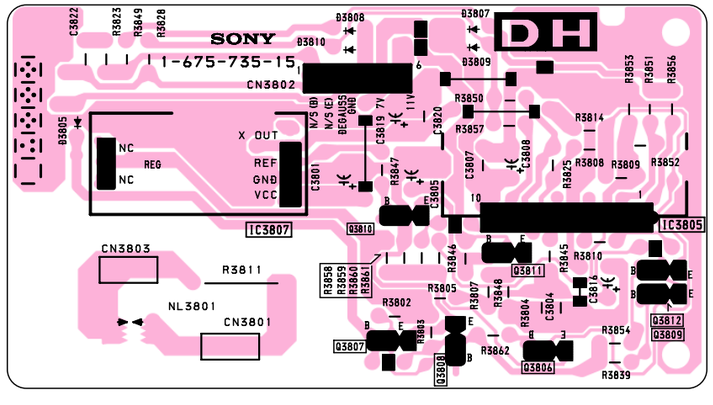
H2 [AV INPUT, PRESET KEY, PHONE OUT]

F2 [AC SWITCH]

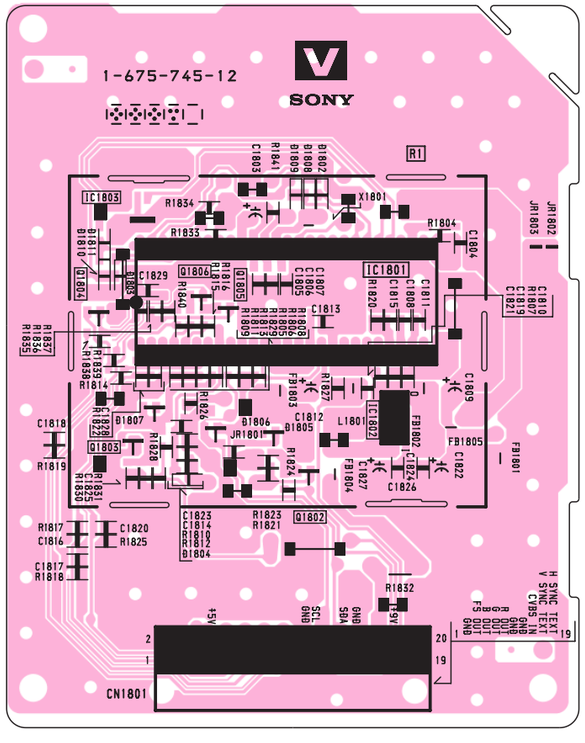
– BC4 Board –



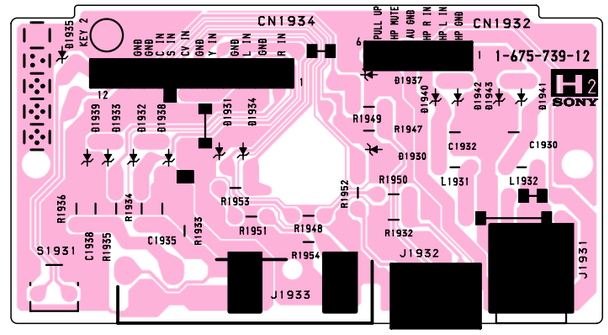
– DH Board –



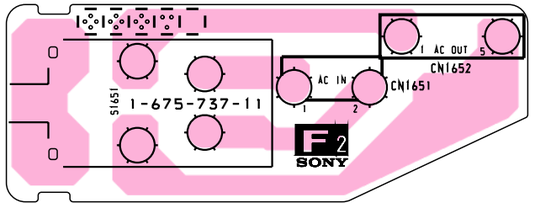
– V Board –



– H2 Board –

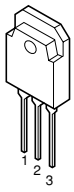
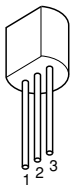
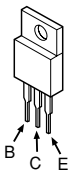
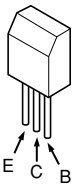
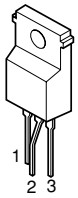
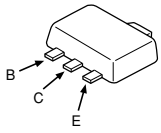


– F2 Board –



7-6. SEMICONDUCTORS

TRANSISTOR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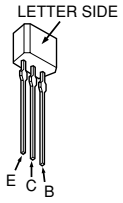	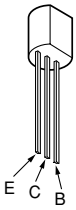	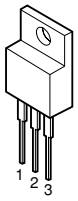	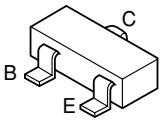	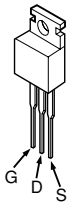	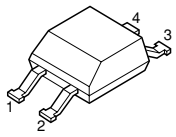
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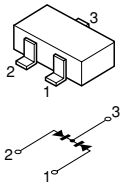
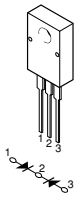
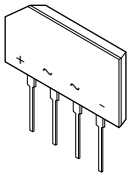
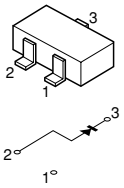
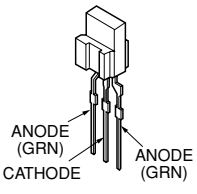
DIODE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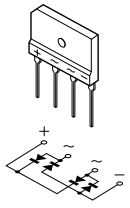	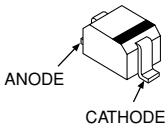	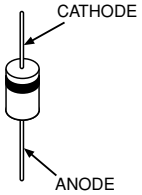		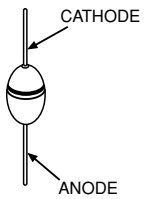	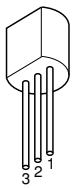
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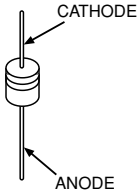

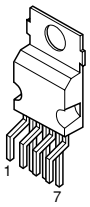

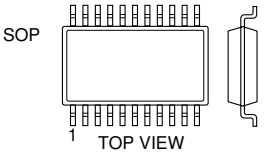

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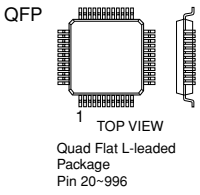

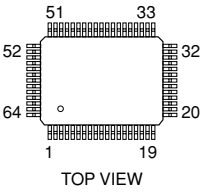

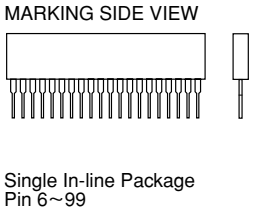

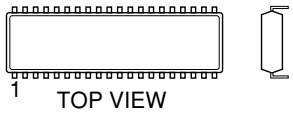

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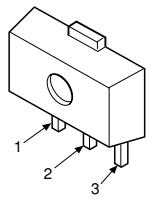

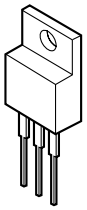

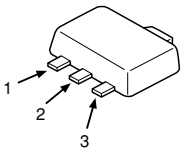

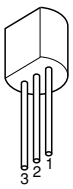

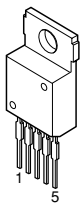

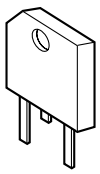

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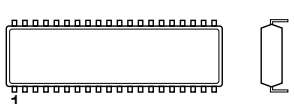

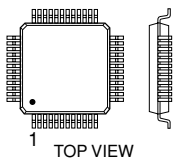

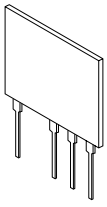

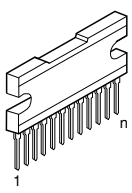

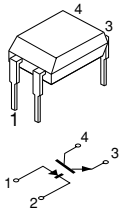

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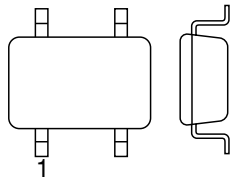		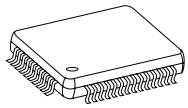	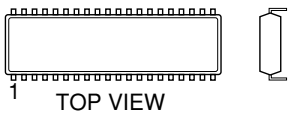		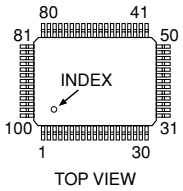
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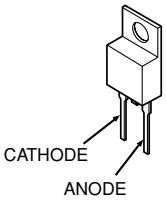
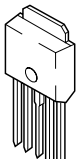
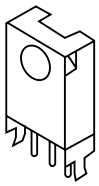
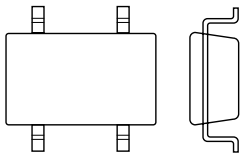
					
D5S4M	PQ37Z534	SBX1981-51RP	PST9120NL		

SECTION 8
EXPLODED VIEWS

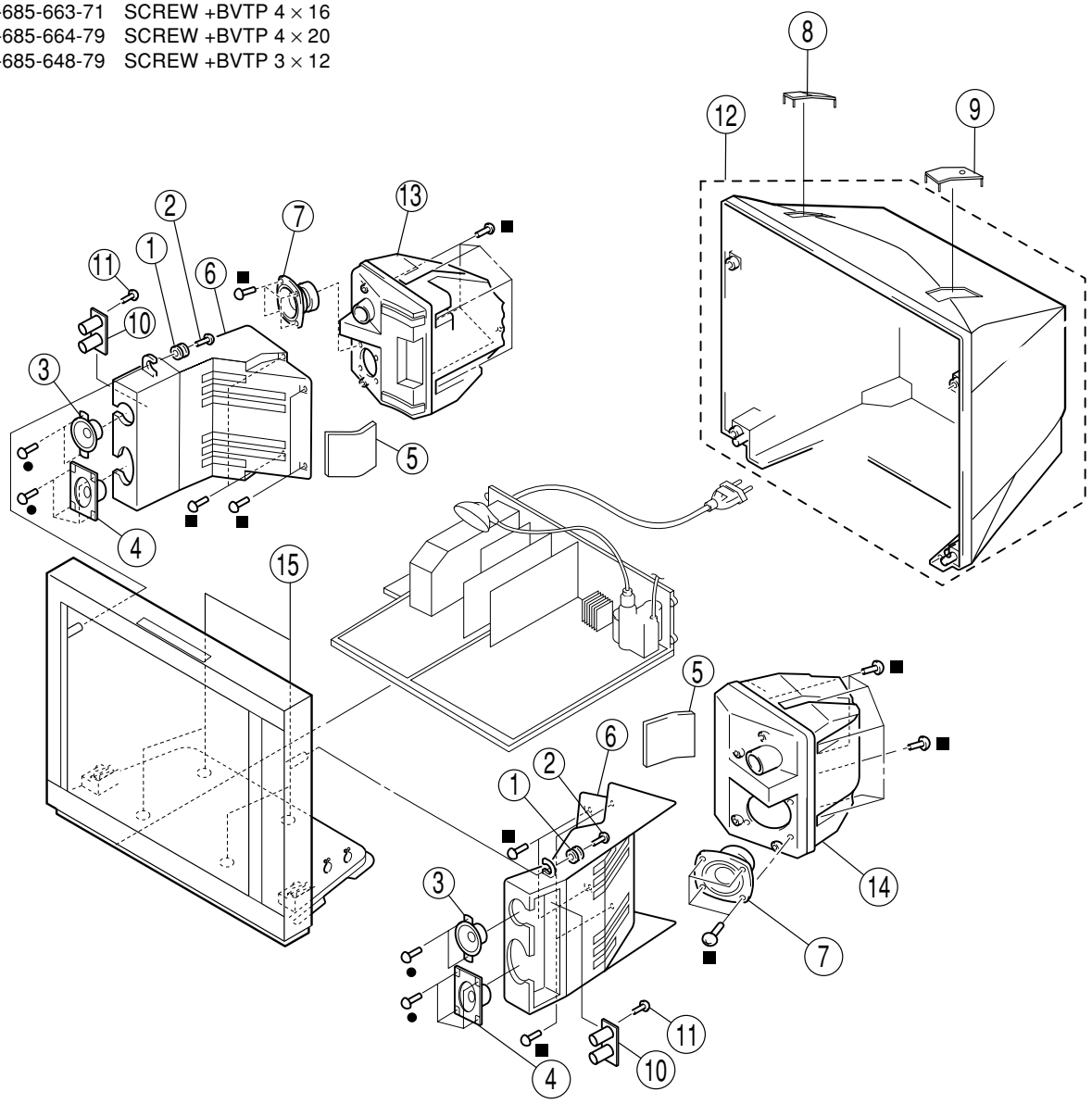
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

8-1. SPEAKER BRACKET

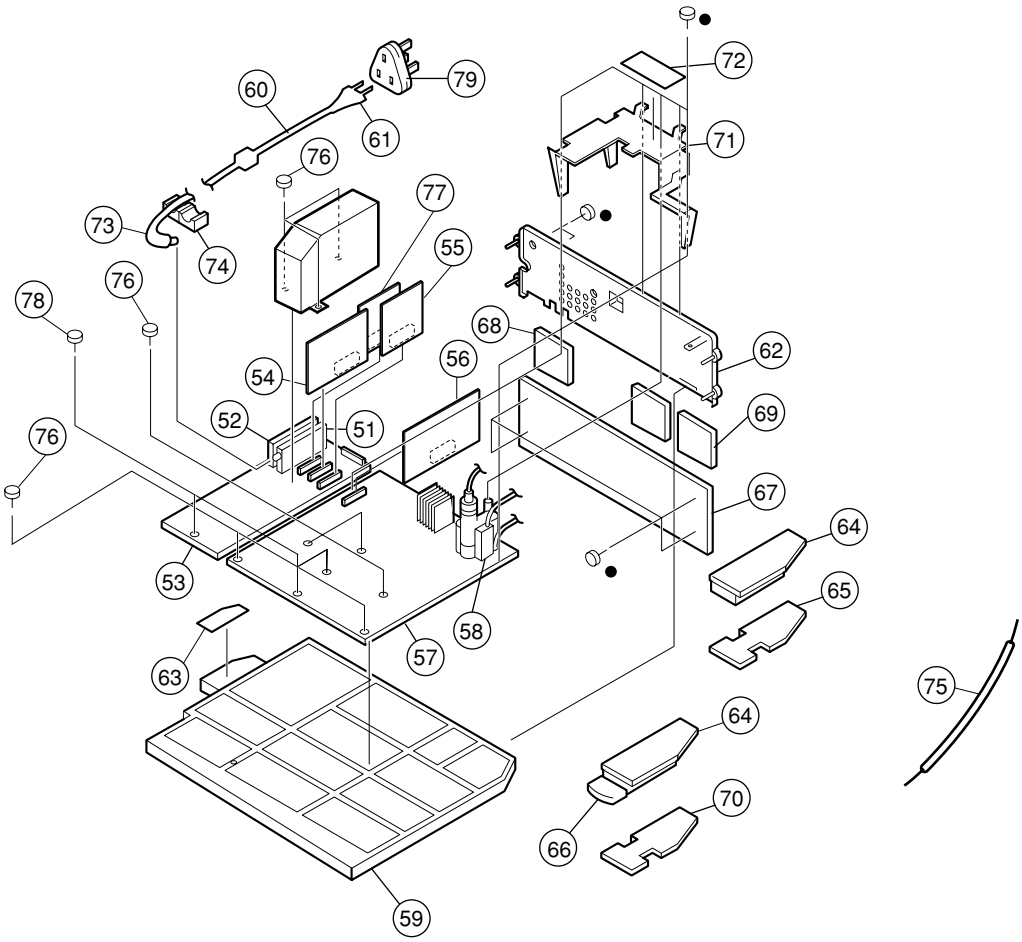
■ : 7-685-663-71 SCREW +BVTP 4 × 16
▲ : 7-685-664-79 SCREW +BVTP 4 × 20
● : 7-685-648-79 SCREW +BVTP 3 × 12



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	4-374-745-11	CUSHION A	
2	4-064-929-02	SCREW, TP + TWH 4 x 25	
3	1-529-940-11	SPEAKER (5 cm)	
4	1-529-939-11	SPEAKER (9 x 5 cm)	
5	* 4-073-084-02	DUCT CUSHION	
6	* 4-079-164-01	DUCT SPEAKER	
7	1-505-473-11	SPEAKER (12 cm)	
8	4-079-337-01	COVER, SCREW (L)	
9	4-079-336-01	COVER, SCREW (R)	
10	A-1391-163-A	SP BOARD MOUNT	
11	4-046-797-01	SCREW (3 x 12), (+) BVTAP	
12	X-4038-430-2	COVER ASSY, REAR	(▲ 10 screws)
13	A-1501-818-A	SP BOX (L) SUB ASSY	
14	A-1501-820-A	SP BOX (R) SUB ASSY	
15	4-081-847-01	FOOT	

8-2. CHASSIS

● : 7-685-648-79 SCREW +BVTP 3 × 12

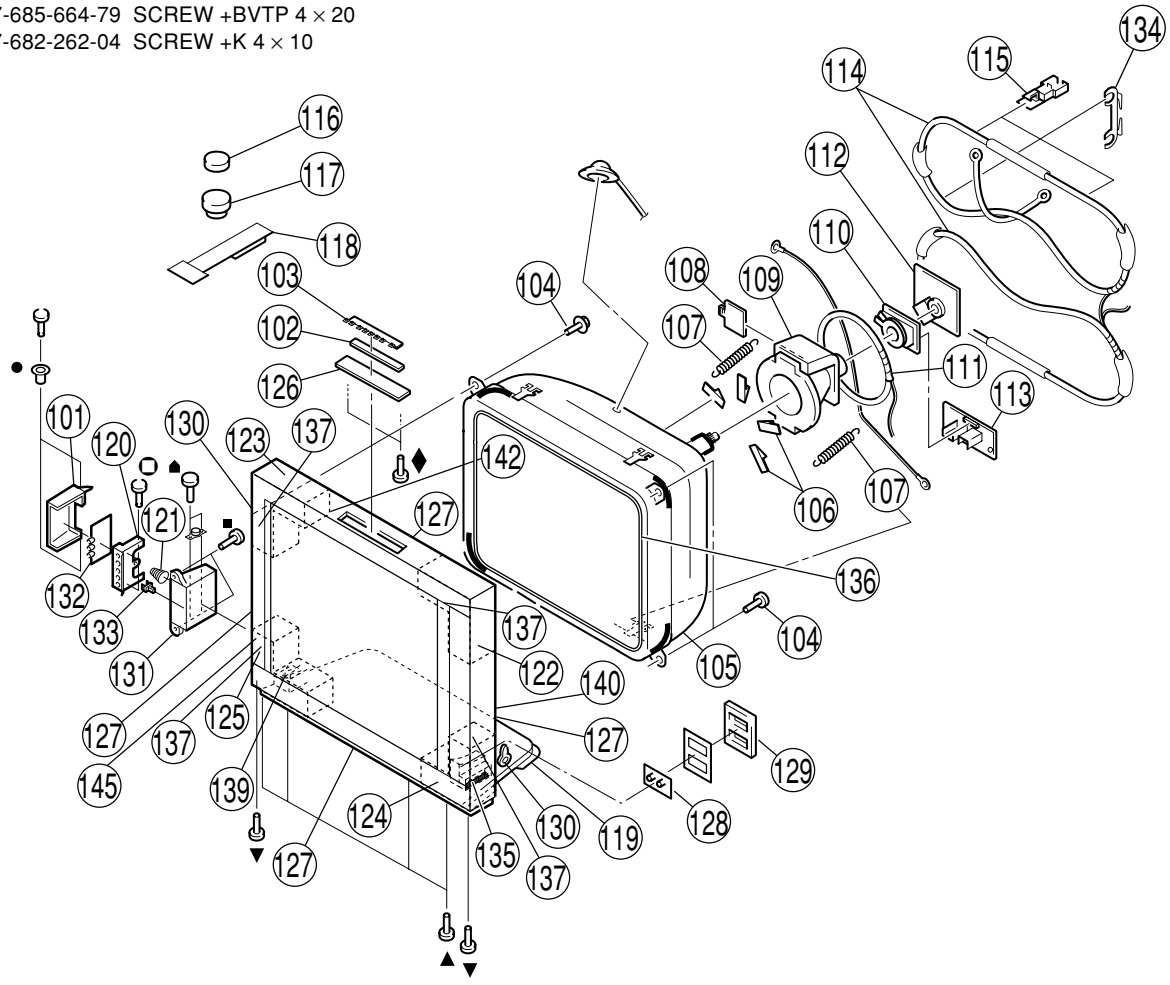


REF. NO.		PART NO.	DESCRIPTION	REMARK
51		8-598-452-30	TUNER, FSS BTF-WG442	
52		8-598-508-10	TUNER, FSS BTF-LG436	
53	*	A-1299-594-A	A BOARD COMPLETE (except KV-ES38M90)	
	*	A-1299-592-A	A BOARD COMPLETE (KV-ES38M90 only)	
54	*	A-1136-251-A	B3 BOARD COMPLETE	
55	*	A-1333-173-A	E BOARD MOUNT	
56	*	A-1333-171-A	D1 BOARD MOUNT	
57	*	A-1348-119-A	D BOARD COMPLETE (KV-ES38M31 only)	
	*	A-1348-113-A	D BOARD COMPLETE (except KV-ES38M31)	
58	⚠	1-453-360-11	TRANSFORMER ASSY, FLYBACK (NX-4601//J1J4) (KV-ES38M61/M90/M91)	
	⚠	1-453-332-21	TRANSFORMER ASSY, FLYBACK (NX-4601//J1B4) (KV-ES38M31)	
59	*	4-071-314-03	BRACKET, MAIN	
60	⚠	4-022-115-01	HOLDER, AC CORD	
61	⚠	1-757-345-11	CORD, POWER (WITH FILTER) (KV-ES38M31 only)	
	⚠	1-791-439-11	CORD, POWER (WITH CONNECTOR) (KV-ES38M61/M91)	
	⚠	1-590-501-21	CORD, POWER (WITH NOISE FILTER) (KV-ES38M90 only)	

REF. NO.		PART NO.	DESCRIPTION	REMARK
62	*	4-071-315-02	BRACKET, TERMINAL	
63	*	A-1241-509-A	F1 BOARD MOUNTED	
64	*	4-071-307-03	HOLDER, F2/H1	
65	*	A-1377-035-A	H1 BOARD MOUNT	
66		4-071-305-03	BUTTON, POWER	
67	*	A-1395-041-A	J BOARD COMPLETE	
68	*	A-1299-593-A	A1 BOARD COMPLETE	
69	*	A-1136-252-A	BC4 BOARD COMPLETE	
70	*	A-1241-510-A	F2 BOARD MOUNT	
71	*	4-071-316-02	SUPPORTER, PWB	
72	*	A-1333-176-A	DH BOARD MOUNTED (KV-ES38M31 only)	
	*	A-1333-175-A	DH BOARD MOUNTED (KV-ES38M61 only)	
	*	A-1333-172-A	DH BOARD MOUNTED (KV-ES38M90/M91)	
73		1-790-082-11	CABLE RF	
74		1-543-653-11	CORE ASSY, BEAD (DIVISION TYPE)	
75		1-900-252-15	LEAD ASSY, G2 (KV-ES38M31 only)	
		1-900-255-46	LEAD ASSY, G2 (except KV-ES38M31)	
76		4-302-428-03	SCREW(WASHER HEAD)(+P3 x 12)	
77	*	A-1342-626-A	V BOARD MOUNT (except KV-ES38M90)	
78		4-046-797-01	SCREW(3 x 12),(+)BVTAP	
79		1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (KV-ES38M90 only)	

8-3. PICTURE TUBE

▲: 7-685-103-19 SCREW +P 2 × 5
○: 7-685-152-19 SCREW +P 3 × 25
●: 7-685-648-79 SCREW +BVTP 3 × 12
■: 7-685-663-71 SCREW +BVTP 4 × 16
◆: 7-685-661-14 SCREW +BVTP 4 × 12
▲: 7-685-664-79 SCREW +BVTP 4 × 20
▼: 7-682-262-04 SCREW +K 4 × 10



REF. NO.		PART NO.	DESCRIPTION	REMARK
101		4-071-308-02	DOOR, CONTROL	
102	*	A-1372-730-A	H3 BOARD MOUNTED	
103		4-071-312-03	BUTTON, TOP SW	
104		4-046-765-12	SCREW, TAPPING 7+CROWN WASHER	
105	⚠	8-735-091-05	PICTURE TUBE (A90LPW80X) (KV-ES38M31)	
	⚠	8-735-080-05	PICTURE TUBE (A90LPW80X) (KV-ES38M61)	
	⚠	8-735-090-05	PICTURE TUBE (A90LPW80X) (KV-38M90/M91)	
106		3-703-961-01	SPACER, DY	
		4-082-357-11	SPACER, DY	
107	*	4-369-318-61	SPRING, TENSION	
108		2-163-920-01	PLATE, TLH CORRECTION	
109	⚠	1-451-528-12	DEFLECTION YOKE (Y38RSC2)	
110		8-453-007-31	NA324-M3	
111		1-452-896-61	COIL, NA ROTATION (RT200)	
112	*	A-1332-227-A	C BOARD MOUNTED	
113	*	A-1342-625-A	VM BOARD MOUNTED	
114	⚠	1-419-845-11	COIL, DEGAUSSING	
115	*	4-080-511-01	CLIP, DGC	
116		1-452-032-00	MAGNET, DISC	
117		1-452-094-00	CIRCULAR DISC MAGNET B	
118		4-051-734-42	PIECE B(120), CONV. CORRECT	
119	*	4-079-159-01	COVER, FRONT	
120	*	X-4037-280-2	HOLDER ASSY, CONTROL	

REF. NO.		PART NO.	DESCRIPTION	REMARK
121		4-071-323-01	SPRING, CONE	
122	*	4-079-161-02	BRACKET (TR), CRT	
123	*	4-079-160-02	BRACKET (TL), CRT	
124	*	4-079-163-02	BRACKET (BR), CRT	
125	*	4-079-162-02	BRACKET (BL), CRT	
126	*	4-071-311-02	HOLDER, H3	
127		X-4038-425-2	FRAME ASSY	
128	*	4-071-306-01	LIGHT, GUIDE	
129	*	4-072-950-01	BRACKET, LIGHT GUIDE	
130		4-073-080-01	FASTEN	
131	*	4-071-310-04	BRACKET, SIDE	
132	*	A-1377-036-A	H2 BOARD MOUNTED	
133		4-047-464-01	CATCHER, PUSH	
134	*	4-054-297-01	HOLDER, DGC	
135	*	4-071-673-01	SHEET, COVER	
136	*	1-419-844-11	COIL, LANDING CORRECTION	
137		4-072-956-01	SCREW SPECIAL (DIA.8) (+TP 4 X 9)	
138		X-4038-426-1	FRAME SUB ASSY, TOP	
139		X-4038-427-1	FRAME SUB ASSY, BOTTOM	
140		X-4038-428-1	FRAME SUB ASSY, RIGHT	
141		X-4038-429-2	FRAME SUB ASSY, LEFT	

SECTION 9
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

REF NO.	PART NO.	DESCRIPTION			REMARK
*	A-1299-594-A	A BOARD COMPLETE (KV-ES38M31/ES38M61/ES38M91)			
*	A-1299-592-A	A BOARD COMPLETE (KV-ES38M90)			
		**********			
*	1-555-110-00	CABLE, PIN			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C001	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C002	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C004	1-163-001-11	CERAMIC CHIP	220PF	10.00%	50V
C005	1-163-001-11	CERAMIC CHIP	220PF	10.00%	50V
C006	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C007	1-126-933-11	ELECT	100UF	20.00%	16V
C009	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C010	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C012	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C013	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C014	1-126-947-11	ELECT	47UF	20.00%	16V
C015	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C016	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C017	1-163-247-91	CERAMIC CHIP	68PF	5.00%	50V
C018	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C019	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C020	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C021	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C024	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C028	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C031	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C032	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C033	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C034	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V
C103	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C104	1-126-933-11	ELECT	100UF	20.00%	16V
C107	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C108	1-126-933-11	ELECT	100UF	20.00%	16V
C109	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C110	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C111	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C112	1-126-933-11	ELECT	100UF	20.00%	16V
C113	1-126-947-11	ELECT	47UF	20.00%	16V
C114	1-126-967-11	ELECT	47UF	20.00%	50V
C301	1-126-767-11	ELECT	1000UF	20.00%	16V
C326	1-126-964-11	ELECT	10UF	20.00%	50V
C1201	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1202	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1203	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C1204	1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C1205	1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C1206	1-126-965-91	ELECT	22UF	20.00%	50V

REF NO.	PART NO.	DESCRIPTION			REMARK
C1207	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1208	1-126-023-11	ELECT	100UF	20.00%	16V
C1209	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C1210	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1211	1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V
C1212	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1213	1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V
C1214	1-126-055-11	ELECT	470UF	20.00%	50V
C1215	1-126-055-11	ELECT	470UF	20.00%	50V
C1216	1-126-943-11	ELECT	2200UF	20.00%	25V
C1217	1-126-943-11	ELECT	2200UF	20.00%	25V
C1219	1-126-961-11	ELECT	2.2UF	20.00%	50V
C1220	1-126-961-11	ELECT	2.2UF	20.00%	50V
C1221	1-126-933-11	ELECT	100UF	20.00%	16V
C1222	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1223	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1224	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1225	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1229	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1230	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C1241	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1242	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1243	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1244	1-110-617-51	ELECT	2200UF	20.00%	50V
C1245	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1246	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C1247	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1248	1-110-617-51	ELECT	2200UF	20.00%	50V
C1249	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C1251	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C1252	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1253	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1254	1-136-165-00	FILM	0.1UF	5.00%	50V
C1255	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C1256	1-137-194-81	FILM	0.47UF	5.00%	50V
C1258	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1259	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1260	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C1262	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C1263	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C1264	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1265	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1266	1-136-165-00	FILM	0.1UF	5.00%	50V
C1267	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C1268	1-137-194-81	FILM	0.47UF	5.00%	50V
C1270	1-163-007-11	CERAMIC CHIP	680PF	10.00%	50V
C1271	1-163-007-11	CERAMIC CHIP	680PF	10.00%	50V
C1272	1-126-941-11	ELECT	470UF	20.00%	25V
C1273	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1274	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1275	1-163-007-11	CERAMIC CHIP	680PF	10.00%	50V

A

REF NO.	PART NO.	DESCRIPTION		REMARK	
C1276	1-163-007-11	CERAMIC CHIP	680PF	10.00%	50V
C1277	1-164-690-91	CERAMIC CHIP	0.0022UF	5.00%	50V
C1279	1-164-690-91	CERAMIC CHIP	0.0022UF	5.00%	50V
C1281	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1282	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C1283	1-164-690-91	CERAMIC CHIP	0.0022UF	5.00%	50V
C1284	1-164-690-91	CERAMIC CHIP	0.0022UF	5.00%	50V
C1285	1-126-933-11	ELECT	100UF	20.00%	16V
C1286	1-126-933-11	ELECT	100UF	20.00%	16V
C1287	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1288	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1289	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1290	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1291	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1292	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1297	1-137-194-81	FILM	0.47UF	5.00%	50V
C1298	1-137-194-81	FILM	0.47UF	5.00%	50V
C1301	1-126-933-11	ELECT	100UF	20.00%	16V
C1302	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C2200	1-126-964-11	ELECT	10UF	20.00%	50V
C2201	1-126-964-11	ELECT	10UF	20.00%	50V
C2202	1-126-964-11	ELECT	10UF	20.00%	50V
C2203	1-126-963-11	ELECT	4.7UF	20.00%	50V
C2204	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C2205	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C2206	1-126-964-11	ELECT	10UF	20.00%	50V
C2209	1-126-968-11	ELECT	100UF	20.00%	50V
C2600	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C2601	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C2602	1-126-933-11	ELECT	100UF	20.00%	16V
C2603	1-126-933-11	ELECT	100UF	20.00%	16V
C2605	1-126-935-11	ELECT	470UF	20.00%	10V
C2606	1-164-344-11	CERAMIC CHIP	0.068UF	10.00%	25V
C2608	1-126-916-11	ELECT	1000UF	20.00%	6.3V
C2609	1-126-935-11	ELECT	470UF	20.00%	6.3V
C2610	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C2611	1-126-934-11	ELECT	220UF	20.00%	10V
C2612	1-126-933-11	ELECT	100UF	20.00%	16V
C2613	1-126-933-11	ELECT	100UF	20.00%	16V
C2614	1-126-935-11	ELECT	470UF	20.00%	10V
C3330	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C3331	1-126-933-11	ELECT	100UF	20.00%	16V
C3336	1-126-933-11	ELECT	100UF	20.00%	16V
C3338	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C3350	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C3351	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C3352	1-163-005-91	CERAMIC CHIP	470PF	10.00%	50V
C3353	1-126-933-11	ELECT	100UF	20.00%	16V
C3354	1-126-967-11	ELECT	47UF	20.00%	50V
C3355	1-126-947-11	ELECT	47UF	20.00%	16V

<CONNECTOR>

CN1100 *	1-560-218-00	PIN, CONNECTOR 7P	
CN1108	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P	
CN1116	1-695-915-11	TAB (CONTACT)	
CN1118	1-793-493-11	CONNECTOR, BOARD TO BOARD 20P (KV-ES38M31/ES38M61/ES38M91)	
CN1138 *	1-564-507-11	PLUG, CONNECTOR 4P	
CN1140	1-793-494-11	CONNECTOR, BOARD TO BOARD 40P	
CN1160 *	1-764-333-11	PLUG, CONNECTOR 10P	
CN1162	1-900-903-64	CONNECTOR ASSY 20P	
CN1180	1-793-495-11	CONNECTOR, BOARD TO BOARD 50P	
CN1190 *	1-564-510-11	PLUG, CONNECTOR 7P	
CN1193 *	1-764-333-11	PLUG, CONNECTOR 10P	
CN1195 *	1-564-506-11	PLUG, CONNECTOR 3P	

<COMPOSITION CIRCUIT BLOCK>

CP1300	1-251-658-31	SPLITTER RF

<DIODE>

D001	8-719-404-50	MA111-TX
D002	8-719-404-50	MA111-TX
D003	8-719-404-50	MA111-TX
D004	8-719-404-50	MA111-TX
D005	8-719-404-50	MA111-TX
D006	8-719-404-50	MA111-TX
D007	8-719-158-18	RD5.6SB3
D013	8-719-158-18	RD5.6SB3
D014	8-719-404-50	MA111-TX
D100	8-719-404-50	MA111-TX
D300	8-719-404-50	MA111-TX
D301	8-719-404-50	MA111-TX
D302	8-719-404-50	MA111-TX
D317	8-719-404-50	MA111-TX
D1205	8-719-158-35	RD9.1S-B
D1208	8-719-404-50	MA111-TX
D1209	8-719-404-50	MA111-TX
D2200	8-719-158-35	RD9.1S-B
D2201	8-719-158-35	RD9.1S-B
D2600	8-719-500-70	D5S4M

<FERRITE BEAD>

FB001	1-414-233-22	FERRITE	0UH
FB002	1-414-233-22	FERRITE	0UH
FB003	1-414-233-22	FERRITE	0UH
FB004	1-414-233-22	FERRITE	0UH
FB005	1-414-233-22	FERRITE	0UH
FB006	1-414-233-22	FERRITE	0UH
FB007	1-414-233-22	FERRITE	0UH
FB008	1-414-233-22	FERRITE	0UH
FB1205	1-410-397-21	FERRITE	1.1UH
FB1206	1-410-397-21	FERRITE	1.1UH
FB1207	1-410-397-21	FERRITE	1.1UH
FB1208	1-410-397-21	FERRITE	1.1UH
FB1300	1-216-295-91	SHORT	0

<FILTER>

FL001	1-236-071-11	ENCAPSULATED COMPONENT

<IC>

IC001	8-752-920-74	CXP750096-035Q
IC002	8-759-042-02	S-80743AL-A7-S
IC003	8-759-675-64	M24C08-MN6T(A)
IC004	8-759-575-71	M24C04-WMN6T
IC100	8-759-042-02	S-80743AL-A7-S
IC1201	8-759-273-12	TDA7315D013TR
IC1203	8-759-553-45	TDA7481

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REF NO.	PART NO.	DESCRIPTION		REMARK
IC1204	8-759-553-45	TDA7481		
IC1205	8-759-100-96	UPC4558G2		
IC2200	8-759-745-64	NJM4560M		
IC2600	8-759-394-36	BA09T		
IC2601	8-759-450-47	BA05T		
IC2603	8-759-640-19	PQ1CG2032FZ		
IC2604	8-759-644-37	PQ5EV3		
		<CHIP CONDUCTOR>		
JR001	1-216-295-91	SHORT	0	
JR002	1-216-295-91	SHORT	0	
JR102	1-216-295-91	SHORT	0	
JR107	1-216-295-91	SHORT	0	
JR1301	1-216-295-91	SHORT	0	
JR2601	1-216-295-91	SHORT	0	
		<COIL>		
L001	1-414-856-11	INDUCTOR	10UH	
L002	1-414-856-11	INDUCTOR	10UH	
L003	1-414-751-11	INDUCTOR	1UH	
L005	1-414-856-11	INDUCTOR	10UH	
L101	1-414-856-11	INDUCTOR	10UH	
L102	1-414-856-11	INDUCTOR	10UH	
L103	1-414-856-11	INDUCTOR	10UH	
L104	1-414-856-11	INDUCTOR	10UH	
L105	1-414-856-11	INDUCTOR	10UH	
L1201	1-414-187-11	INDUCTOR	47UH	
L1202	1-416-857-11	INDUCTOR	65UH	
L1203	1-416-857-11	INDUCTOR	65UH	
L1204	1-416-857-11	INDUCTOR	65UH	
L1205	1-416-857-11	INDUCTOR	65UH	
L1300	1-414-856-11	INDUCTOR	10UH	
L2600	1-419-249-11	INDUCTOR	15UH	
L2601	1-419-249-11	INDUCTOR	15UH	
L2602	1-412-525-31	INDUCTOR	10UH	
L2603	1-412-525-31	INDUCTOR	10UH	
L3302	1-414-856-11	INDUCTOR	10UH	
L3303	1-414-856-11	INDUCTOR	10UH	
L3304	1-414-856-11	INDUCTOR	10UH	
L3305	1-414-856-11	INDUCTOR	10UH	
L3306	1-414-856-11	INDUCTOR	10UH	
		<IC LINK>		
PS1201	1-532-686-21	LINK, IC 2.7A/150V		
PS1202	1-532-686-21	LINK, IC 2.7A/150V		
PS1203	1-532-686-21	LINK, IC 2.7A/150V		
PS1204	1-532-686-21	LINK, IC 2.7A/150V		
		<TRANSISTOR>		
Q001	8-729-026-49	2SA1037AK-T146-R		
Q002	8-729-230-49	2SC2712-YG		
Q003	8-729-230-49	2SC2712-YG		
Q004	8-729-230-49	2SC2712-YG		
Q101	8-729-026-49	2SA1037AK-T146-R		
Q301	8-729-026-49	2SA1037AK-T146-R		
Q313	8-729-230-49	2SC2712-YG		
Q1205	1-801-806-11	TR DTC144EKA		
Q1206	8-729-230-49	2SC2712-YG		
Q1207	8-729-230-49	2SC2712-YG		
Q1209	8-729-230-49	2SC2712-YG		
Q1210	8-729-230-49	2SC2712-YG		
Q1211	8-729-026-49	2SA1037AK-T146-R		
Q2200	1-801-806-11	TR DTC144EKA		
Q2201	1-801-806-11	TR DTC144EKA		
Q3300	8-729-026-49	2SA1037AK-T146-R		
		<RESISTOR>		
R001	1-216-033-00	RES-CHIP	220 5%	1/10W
R002	1-216-033-00	RES-CHIP	220 5%	1/10W
R003	1-216-049-11	RES-CHIP	1K 5%	1/10W
R004	1-216-295-91	SHORT	0	
R005	1-216-295-91	SHORT	0	
R006	1-216-033-00	RES-CHIP	220 5%	1/10W
R008	1-216-065-91	RES-CHIP	4.7K 5%	1/10W
R010	1-216-061-91	RES-CHIP	3.3K 5%	1/10W
R011	1-216-065-91	RES-CHIP	4.7K 5%	1/10W
R012	1-216-061-91	RES-CHIP	3.3K 5%	1/10W
R013	1-216-065-91	RES-CHIP	4.7K 5%	1/10W
R014	1-216-025-11	RES-CHIP	100 5%	1/10W
R015	1-216-025-11	RES-CHIP	100 5%	1/10W
R016	1-216-057-00	RES-CHIP	2.2K 5%	1/10W
R017	1-216-049-11	RES-CHIP	1K 5%	1/10W
R018	1-216-045-00	RES-CHIP	680 5%	1/10W
R019	1-216-049-11	RES-CHIP	1K 5%	1/10W
R020	1-216-057-00	RES-CHIP	2.2K 5%	1/10W
R021	1-216-295-91	SHORT	0	
R022	1-216-033-00	RES-CHIP	220 5%	1/10W
R023	1-216-025-11	RES-CHIP	100 5%	1/10W
R024	1-216-063-91	RES-CHIP	3.9K 5%	1/10W
R025	1-216-033-00	RES-CHIP	220 5%	1/10W
R026	1-216-033-00	RES-CHIP	220 5%	1/10W
R027	1-216-049-11	RES-CHIP	1K 5%	1/10W
R028	1-216-049-11	RES-CHIP	1K 5%	1/10W
R029	1-216-049-11	RES-CHIP	1K 5%	1/10W
R031	1-216-033-00	RES-CHIP	220 5%	1/10W
R032	1-216-049-11	RES-CHIP	1K 5%	1/10W
R033	1-216-033-00	RES-CHIP	220 5%	1/10W
R035	1-216-057-00	RES-CHIP	2.2K 5%	1/10W
R036	1-216-033-00	RES-CHIP	220 5%	1/10W
R037	1-216-033-00	RES-CHIP	220 5%	1/10W
R038	1-216-045-00	RES-CHIP	680 5%	1/10W
R039	1-216-025-11	RES-CHIP	100 5%	1/10W
R040	1-216-033-00	RES-CHIP	220 5%	1/10W
R041	1-216-025-11	RES-CHIP	100 5%	1/10W
R042	1-216-295-91	SHORT	0	
R043	1-216-025-11	RES-CHIP	100 5%	1/10W
R044	1-216-065-91	RES-CHIP	4.7K 5%	1/10W
R045	1-216-065-91	RES-CHIP	4.7K 5%	1/10W
R046	1-216-033-00	RES-CHIP	220 5%	1/10W
R047	1-216-033-00	RES-CHIP	220 5%	1/10W
R048	1-216-073-91	RES-CHIP	10K 5%	1/10W
R051	1-216-049-11	RES-CHIP	1K 5%	1/10W
R052	1-216-049-11	RES-CHIP	1K 5%	1/10W
R053	1-216-049-11	RES-CHIP	1K 5%	1/10W
R054	1-216-033-00	RES-CHIP	220 5%	1/10W
R055	1-216-295-91	SHORT	0	
R056	1-216-295-91	SHORT	0	
R057	1-216-295-91	SHORT	0	
R058	1-216-295-91	SHORT	0	
R059	1-216-033-00	RES-CHIP	220 5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R060	1-216-033-00	RES-CHIP	220	5%	1/10W
R062	1-216-049-11	RES-CHIP	1K	5%	1/10W
R065	1-216-045-00	RES-CHIP	680	5%	1/10W
R066	1-216-049-11	RES-CHIP	1K	5%	1/10W
R067	1-216-073-91	RES-CHIP	10K	5%	1/10W
R068	1-216-073-91	RES-CHIP	10K	5%	1/10W
R069	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R070	1-216-033-00	RES-CHIP	220	5%	1/10W
R071	1-216-025-11	RES-CHIP	100	5%	1/10W
R072	1-216-025-11	RES-CHIP	100	5%	1/10W
R073	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R074	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R075	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R076	1-216-295-91	SHORT	0		
R077	1-216-025-11	RES-CHIP	100	5%	1/10W
R078	1-216-295-91	SHORT	0		
R079	1-216-025-11	RES-CHIP	100	5%	1/10W
R080	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R081	1-216-025-11	RES-CHIP	100	5%	1/10W
R082	1-216-041-00	RES-CHIP	470	5%	1/10W
R083	1-216-049-11	RES-CHIP	1K	5%	1/10W
R084	1-216-049-11	RES-CHIP	1K	5%	1/10W
R085	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R086	1-216-073-91	RES-CHIP	10K	5%	1/10W
R087	1-216-033-00	RES-CHIP	220	5%	1/10W
R089	1-216-049-11	RES-CHIP	1K	5%	1/10W
R090	1-216-295-91	SHORT	0		
R091	1-216-295-91	SHORT	0		
R092	1-216-033-00	RES-CHIP	220	5%	1/10W
R093	1-216-073-91	RES-CHIP	10K	5%	1/10W
R094	1-216-073-91	RES-CHIP	10K	5%	1/10W
R101	1-216-025-11	RES-CHIP	100	5%	1/10W
R102	1-216-025-11	RES-CHIP	100	5%	1/10W
R105	1-216-295-91	SHORT	0		
R109	1-216-041-00	RES-CHIP	470	5%	1/10W
R110	1-216-043-91	RES-CHIP	560	5%	1/10W
R111	1-216-025-11	RES-CHIP	100	5%	1/10W
R112	1-216-025-11	RES-CHIP	100	5%	1/10W
R116	1-216-025-11	RES-CHIP	100	5%	1/10W
R117	1-216-025-11	RES-CHIP	100	5%	1/10W
R118	1-216-025-11	RES-CHIP	100	5%	1/10W
R301	1-216-113-00	RES-CHIP	470K	5%	1/10W
R302	1-216-089-91	RES-CHIP	47K	5%	1/10W
R303	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1201	1-216-033-00	RES-CHIP	220	5%	1/10W
R1202	1-216-033-00	RES-CHIP	220	5%	1/10W
R1203	1-216-079-00	RES-CHIP	18K	5%	1/10W
R1204	1-216-079-00	RES-CHIP	18K	5%	1/10W
R1205	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1206	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1207	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1208	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1236	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R1237	1-216-085-91	RES-CHIP	33K	5%	1/10W
R1238	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1239	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1240	1-216-085-91	RES-CHIP	33K	5%	1/10W
R1241	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1242	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1244	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1246	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R1247	1-216-085-91	RES-CHIP	33K	5%	1/10W
R1248	1-216-075-00	RES-CHIP	12K	5%	1/10W
R1249	1-216-025-11	RES-CHIP	100	5%	1/10W
R1250	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R1252	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1253	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1254	1-216-075-00	RES-CHIP	12K	5%	1/10W
R1255	1-216-075-00	RES-CHIP	12K	5%	1/10W
R1256	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1257	1-216-025-11	RES-CHIP	100	5%	1/10W
R1258	1-216-075-00	RES-CHIP	12K	5%	1/10W
R1259	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1260	1-216-037-00	RES-CHIP	330	5%	1/10W
R1261	1-216-037-00	RES-CHIP	330	5%	1/10W
R1264	1-216-041-00	RES-CHIP	470	5%	1/10W
R1265	1-216-041-00	RES-CHIP	470	5%	1/10W
R1266	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1267	1-216-077-91	RES-CHIP	15K	5%	1/10W
R1269	1-216-025-11	RES-CHIP	100	5%	1/10W
R1270	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1271	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1272	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1273	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1275	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1276	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1277	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1280	1-216-037-00	RES-CHIP	330	5%	1/10W
R1281	1-216-037-00	RES-CHIP	330	5%	1/10W
R1283	1-216-295-91	SHORT	0		
R1284	1-216-295-91	SHORT	0		
R1286	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1287	1-216-037-00	RES-CHIP	330	5%	1/10W
R1288	1-216-037-00	RES-CHIP	330	5%	1/10W
R1289	1-216-037-00	RES-CHIP	330	5%	1/10W
R1290	1-216-037-00	RES-CHIP	330	5%	1/10W
R2200	1-216-021-00	RES-CHIP	68	5%	1/10W
R2201	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2202	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2203	1-216-021-00	RES-CHIP	68	5%	1/10W
R2204	1-216-073-91	RES-CHIP	10K	5%	1/10W
R2205	1-216-097-11	RES-CHIP	100K	5%	1/10W
R2206	1-216-117-00	RES-CHIP	680K	5%	1/10W
R2207	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R2208	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2209	1-216-117-00	RES-CHIP	680K	5%	1/10W
R2210	1-216-089-91	RES-CHIP	47K	5%	1/10W
R2211	1-216-097-11	RES-CHIP	100K	5%	1/10W
R2212	1-216-073-91	RES-CHIP	10K	5%	1/10W
R2213	1-216-089-91	RES-CHIP	47K	5%	1/10W
R2214	1-216-089-91	RES-CHIP	47K	5%	1/10W
R2215	1-216-089-91	RES-CHIP	47K	5%	1/10W
R2216	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2217	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2600	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2601	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R2602	1-208-781-11	METAL CHIP	910	0.5%	1/10W
R2603	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R2604	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R3300	1-216-043-91	RES-CHIP	560	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R3320	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3323	1-216-025-11	RES-CHIP	100	5%	1/10W
R3334	1-216-025-11	RES-CHIP	100	5%	1/10W
R3362	1-216-025-11	RES-CHIP	100	5%	1/10W
R3374	1-216-295-91	SHORT	0		
		<VARIABLE RESISTOR>			
RV3300	1-238-597-11	RES, ADJ, CARBON 1K			
		<TUNER>			
TU101	8-598-452-30	TUNER, FSS BTF-WG442			
TU3301	8-598-508-10	TUNER, FSS BTF-LG436			
		<CRYSTAL>			
X001	1-567-928-11	VIBLATOR, CERAMIC			
**********					
*	A-1299-593-A	A1 BOARD COMPLETE			
		**********			
	3-350-679-01	WASHER, FIBER			
		<CAPACITOR>			
C8103	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8104	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8105	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8106	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8107	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8108	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8109	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8110	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8111	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8112	1-163-001-11	CERAMIC CHIP	220PF	10.00%	50V
C8116	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C8117	1-126-382-11	ELECT	100UF	20.00%	16V
C8118	1-127-532-11	ELECT	47UF	20.00%	6.3V
C8119	1-126-795-11	ELECT	10UF	20.00%	25V
C8120	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8121	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C8122	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C8123	1-127-532-11	ELECT	47UF	20.00%	6.3V
C8124	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8125	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8126	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8129	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8130	1-126-382-11	ELECT	100UF	20.00%	16V
C8131	1-126-382-11	ELECT	100UF	20.00%	16V
C8132	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C8133	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8134	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8135	1-126-382-11	ELECT	100UF	20.00%	16V
C8136	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8137	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8138	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8139	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8140	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V

REF NO.	PART NO.	DESCRIPTION		REMARK	
C8141	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8142	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C8143	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8144	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8145	1-163-233-91	CERAMIC CHIP	18PF	5.00%	50V
C8146	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8147	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8150	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8155	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8161	1-127-532-11	ELECT	47UF	20.00%	6.3V
C8162	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C8163	1-216-295-91	SHORT	0		
C8166	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8167	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8168	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8197	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8198	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8199	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8200	1-216-295-91	SHORT	0		
C8201	1-216-295-91	SHORT	0		
C8202	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8203	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8204	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8205	1-163-253-11	CERAMIC CHIP	120PF	5.00%	50V
C8206	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8207	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8208	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8209	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8210	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C8211	1-115-340-11	CERAMIC CHIP	0.22UF	10.00%	25V
C8212	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C8213	1-125-838-11	CERAMIC CHIP	2.2UF	10%	6.3V
C8218	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
		<CONNECTOR>			
CN8100	1-793-867-11	PIN, CONNECTOR (PC BORAD) 10P			
CN8101	1-793-867-11	PIN, CONNECTOR (PC BORAD) 10P			
		<FERRITE BEAD>			
FB8100	1-216-295-91	SHORT	0		
FB8101	1-216-295-91	SHORT	0		
FB8102	1-216-295-91	SHORT	0		
FB8103	1-216-295-91	SHORT	0		
FB8104	1-414-598-11	FERRITE	0UH		
FB8105	1-216-295-91	SHORT	0		
FB8106	1-414-598-11	FERRITE	0UH		
FB8108	1-414-598-11	FERRITE	0UH		
FB8109	1-414-598-11	FERRITE	0UH		
FB8110	1-414-598-11	FERRITE	0UH		
FB8111	1-414-598-11	FERRITE	0UH		
FB8112	1-414-598-11	FERRITE	0UH		
FB8113	1-414-598-11	FERRITE	0UH		
FB8114	1-414-598-11	FERRITE	0UH		
FB8115	1-414-598-11	FERRITE	0UH		
FB8116	1-414-598-11	FERRITE	0UH		
FB8117	1-414-598-11	FERRITE	0UH		
FB8118	1-414-598-11	FERRITE	0UH		
FB8119	1-414-598-11	FERRITE	0UH		
FB8120	1-414-598-11	FERRITE	0UH		

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REF NO.	PART NO.	DESCRIPTION		REMARK
FB8121	1-414-598-11	FERRITE	0UH	
		<FILTER>		
FL8100	1-234-177-21	FILTER, CHIP EMI		
FL8101	1-234-177-21	FILTER, CHIP EMI		
FL8102	1-234-177-21	FILTER, CHIP EMI		
		<IC>		
IC8102	8-759-576-72	LF50CDT-TR		
IC8103	8-759-579-68	AK4524		
IC8104	8-759-542-87	S-80827ANUP-EDQ		
IC8105	8-759-833-26	IC TC9446F-011		
IC8106	8-759-242-70	TC7WU04F		
IC8107	8-759-459-69	S-80743AN-D7		
		<CHIP CONDUCTOR>		
JR8102	1-216-295-91	SHORT	0	
JR8103	1-216-295-91	SHORT	0	
		<COIL>		
L8100	1-412-026-11	INDUCTOR	1UH	
L8101	1-412-026-11	INDUCTOR	1UH	
L8102	1-412-026-11	INDUCTOR	1UH	
L8103	1-412-026-11	INDUCTOR	1UH	
L8104	1-412-026-11	INDUCTOR	1UH	
L8105	1-412-026-11	INDUCTOR	1UH	
		<RESISTOR>		
R8101	1-216-033-00	RES-CHIP	220 5% 1/10W	
R8102	1-216-061-91	RES-CHIP	3.3K 5% 1/10W	
R8103	1-216-061-91	RES-CHIP	3.3K 5% 1/10W	
R8106	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	
R8107	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	
R8120	1-216-049-11	RES-CHIP	1K 5% 1/10W	
R8121	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8122	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8123	1-216-009-91	RES-CHIP	22 5% 1/10W	
R8124	1-216-009-91	RES-CHIP	22 5% 1/10W	
R8125	1-216-009-91	RES-CHIP	22 5% 1/10W	
R8126	1-216-009-91	RES-CHIP	22 5% 1/10W	
R8127	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8128	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8129	1-216-009-91	RES-CHIP	22 5% 1/10W	
R8131	1-216-295-91	SHORT	0	
R8133	1-216-129-00	RES-CHIP	2.2M 5% 1/10W	
R8134	1-216-295-91	SHORT	0	
R8135	1-216-295-91	SHORT	0	
R8137	1-216-295-91	SHORT	0	
R8138	1-216-049-11	RES-CHIP	1K 5% 1/10W	
R8139	1-216-037-00	RES-CHIP	330 5% 1/10W	
R8140	1-216-049-11	RES-CHIP	1K 5% 1/10W	
R8141	1-216-295-91	SHORT	0	
R8143	1-216-295-91	SHORT	0	
R8144	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8145	1-216-033-00	RES-CHIP	220 5% 1/10W	
R8146	1-216-033-00	RES-CHIP	220 5% 1/10W	
R8147	1-216-295-91	SHORT	0	
R8148	1-216-295-91	SHORT	0	
R8149	1-216-037-00	RES-CHIP	330 5% 1/10W	
R8155	1-216-295-91	SHORT	0	
R8157	1-216-037-00	RES-CHIP	330 5% 1/10W	
R8158	1-216-037-00	RES-CHIP	330 5% 1/10W	
R8161	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8168	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8169	1-216-097-11	RES-CHIP	100K 5% 1/10W	
R8170	1-216-121-11	RES-CHIP	1M 5% 1/10W	
R8171	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8172	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8173	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8200	1-216-073-91	RES-CHIP	10K 5% 1/10W	
R8201	1-216-025-11	RES-CHIP	100 5% 1/10W	
R8202	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	
R8203	1-208-782-11	METAL CHIP	1K 0.5% 1/10W	
R8204	1-216-073-91	RES-CHIP	10K 5% 1/10W	
R8205	1-208-782-11	METAL CHIP	1K 0.5% 1/10W	
R8206	1-216-049-11	RES-CHIP	1K 5% 1/10W	
R8207	1-216-077-91	RES-CHIP	15K 5% 1/10W	
		<CRYSTAL>		
X8102	1-781-041-11	VIBRATOR, CRYSTAL		

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* A-1136-251-A B3 BOARD COMPLETE
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<CAPACITOR>

C333	1-216-295-91	SHORT	0		
C368	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C369	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C372	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C373	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C374	1-126-603-11	ELECT CHIP	4.7UF	20.00%	35V
C375	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C376	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C377	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C378	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C501	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C502	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C503	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C505	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C507	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C509	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C510	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C511	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C512	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C514	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C515	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C516	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C517	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C518	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C519	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C520	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C521	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V

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REF NO.	PART NO.	DESCRIPTION		REMARK	
C522	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C523	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C524	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C525	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C526	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C527	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C528	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C529	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C531	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C533	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C535	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C536	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C537	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C538	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C539	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C540	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C542	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C543	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C545	1-126-396-11	ELECT CHIP	47UF	20.00%	16V
C546	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C548	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C549	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C550	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C551	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C554	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C555	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C556	1-126-392-11	ELECT CHIP	100UF	20.00%	6.3V
C557	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C559	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C560	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C601	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C602	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C603	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C604	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C605	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C606	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C607	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C608	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C609	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C610	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C611	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C612	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C613	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C614	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C615	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C616	1-126-396-11	ELECT CHIP	47UF	20.00%	16V
C617	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C618	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C619	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C620	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C621	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C622	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C623	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C624	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C625	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C626	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C627	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C628	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C629	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C630	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C631	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C632	1-126-206-11	ELECT CHIP	100UF	20.00%	6.3V
C633	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C634	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C635	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C636	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C637	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C638	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C639	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C640	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C642	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C643	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C644	1-126-398-11	ELECT CHIP	4.7UF	20.00%	35V
C645	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C801	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C802	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C803	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C804	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C806	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C807	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C808	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C809	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C810	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C811	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C812	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C813	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C814	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C815	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C816	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C817	1-163-229-11	CERAMIC CHIP	12PF	5.00%	50V
C818	1-163-229-11	CERAMIC CHIP	12PF	5.00%	50V
C819	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C820	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C821	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C822	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C823	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C824	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C827	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C829	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C834	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C835	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C839	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C840	1-126-206-11	ELECT CHIP	100UF	20.00%	6.3V
C841	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C842	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C843	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C844	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C848	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C849	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C850	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C851	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C853	1-164-182-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C854	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C901	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C902	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C903	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C904	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C905	1-109-982-11	CERAMIC CHIP	1UF	10.00%	10V
C906	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C907	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C908	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C909	1-126-396-11	ELECT CHIP	47UF	20.00%	16V
C910	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION			REMARK
C913	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C914	1-126-394-11	ELECT CHIP	10UF	20.00% 16V	
C950	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C954	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
		<CONNECTOR>			
CN502	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P			
		<DIODE>			
D501	8-719-056-77	UDZ-TE-17-3.9B			
D601	8-719-404-50	MA111-TX			
		<FERRITE BEAD>			
FB501	1-414-813-11	FERRITE	0UH		
FB502	1-414-813-11	FERRITE	0UH		
FB503	1-414-813-11	FERRITE	0UH		
FB504	1-414-813-11	FERRITE	0UH		
FB601	1-414-553-11	FERRITE	0UH		
FB801	1-414-553-11	FERRITE	0UH		
FB802	1-414-553-11	FERRITE	0UH		
		<FILTER>			
FL306	1-239-558-11	FILTER, CHIP EMI			
FL501	1-233-877-11	FILTER, LOW PASS			
FL502	1-233-504-21	FILTER, LOW PASS			
FL503	1-233-504-21	FILTER, LOW PASS			
FL504	1-234-177-21	FILTER, CHIP EMI			
FL505	1-234-177-21	FILTER, CHIP EMI			
FL506	1-234-177-21	FILTER, CHIP EMI			
FL508	1-234-177-21	FILTER, CHIP EMI			
FL509	1-234-177-21	FILTER, CHIP EMI			
FL510	1-234-177-21	FILTER, CHIP EMI			
FL511	1-234-177-21	FILTER, CHIP EMI			
FL512	1-234-177-21	FILTER, CHIP EMI			
FL601	1-234-177-21	FILTER, CHIP EMI			
FL602	1-234-177-21	FILTER, CHIP EMI			
FL603	1-234-177-21	FILTER, CHIP EMI			
FL606	1-239-560-11	FILTER, CHIP EMI			
FL801	1-234-177-21	FILTER, CHIP EMI			
FL802	1-234-177-21	FILTER, CHIP EMI			
FL803	1-234-177-21	FILTER, CHIP EMI			
FL804	1-234-177-21	FILTER, CHIP EMI			
FL806	1-234-177-21	FILTER, CHIP EMI			
FL807	1-234-177-21	FILTER, CHIP EMI			
FL808	1-234-177-21	FILTER, CHIP EMI			
FL901	1-233-878-11	FILTER, LOW PASS			
FL902	1-233-876-11	FILTER, LOW PASS			
FL903	1-233-876-11	FILTER, LOW PASS			
FL904	1-234-177-21	FILTER, CHIP EMI			
FL905	1-234-177-21	FILTER, CHIP EMI			
FL906	1-234-177-21	FILTER, CHIP EMI			
FL907	1-234-177-21	FILTER, CHIP EMI			
		<IC>			
IC313	8-759-669-75	TLC2932IPWR			
IC314	8-759-525-10	TC7SET08F(TE85L)			
IC315	8-759-525-10	TC7SET08F(TE85L)			
IC316	8-759-525-10	TC7SET08F(TE85L)			
IC501	8-759-447-90	TLC5733AIPM			
IC504	8-759-669-78	TLC2933IPWR-12			
IC505	8-759-640-16	TC7SET04F(TE85R			
IC506	8-759-640-16	TC7SET04F(TE85R			
IC601	8-752-398-47	CXD2090Q			
IC602	8-759-836-37	IC MT48LC1M16A1TG-6S			
IC603	⚠ 8-759-669-75	TLC2932IPWR			
IC604	8-752-072-94	CXA1875AM-T4			
IC801	8-759-672-57	CXD9509AQ			
IC802	8-759-677-37	MT48LC2M32B2TG-			
IC803	8-759-460-29	PST9120NL			
IC901	8-752-367-59	CXD2309Q			
IC902	8-759-829-33	IC MB94918RPF-G-133-BND			
IC903	6-700-149-01	IC M24C04-MN6T(A)			
IC904	8-759-349-11	PST9145NL			
		<COIL>			
L304	1-412-029-11	INDUCTOR	10UH		
L305	1-412-029-11	INDUCTOR	10UH		
L501	1-412-026-11	INDUCTOR	1UH		
L502	1-412-026-11	INDUCTOR	1UH		
L503	1-412-026-11	INDUCTOR	1UH		
L504	1-412-026-11	INDUCTOR	1UH		
L505	1-412-029-11	INDUCTOR	10UH		
L506	1-412-026-11	INDUCTOR	1UH		
L508	1-412-029-11	INDUCTOR	10UH		
L509	1-412-029-11	INDUCTOR	10UH		
L511	1-412-026-11	INDUCTOR	1UH		
L512	1-412-026-11	INDUCTOR	1UH		
L604	1-412-029-11	INDUCTOR	10UH		
L605	1-412-029-11	INDUCTOR	10UH		
		<TRANSISTOR>			
Q304	8-729-120-28	2SC1623-L5L6			
Q501	8-729-216-22	2SA1162-G			
Q502	8-729-120-28	2SC1623-L5L6			
Q503	8-729-120-28	2SC1623-L5L6			
Q510	8-729-120-28	2SC1623-L5L6			
Q511	8-729-120-28	2SC1623-L5L6			
Q512	8-729-120-28	2SC1623-L5L6			
Q513	8-729-120-28	2SC1623-L5L6			
Q514	8-729-120-28	2SC1623-L5L6			
Q515	8-729-120-28	2SC1623-L5L6			
Q516	8-729-120-28	2SC1623-L5L6			
Q517	8-729-120-28	2SC1623-L5L6			
Q518	8-729-216-22	2SA1162-G			
Q519	1-801-806-11	TR DTC144EKA			
Q520	1-801-806-11	TR DTC144EKA			
Q521	8-729-120-28	2SC1623-L5L6			
Q522	8-729-120-28	2SC1623-L5L6			
Q523	8-729-120-28	2SC1623-L5L6			
Q524	8-729-120-28	2SC1623-L5L6			
Q601	8-729-120-28	2SC1623-L5L6			
Q602	8-729-120-28	2SC1623-L5L6			
Q901	8-729-216-22	2SA1162-G			
Q902	8-729-216-22	2SA1162-G			
Q903	8-729-216-22	2SA1162-G			
Q904	8-729-028-28	2SK2036(TE85L)			

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REF NO.	PART NO.	DESCRIPTION		REMARK	
Q905	8-729-028-28	2SK2036(TE85L)			
Q906	1-801-806-11	TR DTC144EKA			
Q907	8-729-216-22	2SA1162-G			
Q908	8-729-216-22	2SA1162-G			
Q909	8-729-216-22	2SA1162-G			
		<RESISTOR>			
R310	1-216-009-91	RES-CHIP	22	5%	1/10W
R334	1-216-295-91	SHORT	0		
R339	1-216-295-91	SHORT	0		
R350	1-216-049-11	RES-CHIP	1K	5%	1/10W
R361	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R362	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R363	1-216-037-00	RES-CHIP	330	5%	1/10W
R364	1-216-295-91	SHORT	0		
R365	1-216-047-91	RES-CHIP	820	5%	1/10W
R366	1-216-049-11	RES-CHIP	1K	5%	1/10W
R367	1-216-117-00	RES-CHIP	680K	5%	1/10W
R368	1-216-117-00	RES-CHIP	680K	5%	1/10W
R369	1-216-295-91	SHORT	0		
R371	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R372	1-216-009-91	RES-CHIP	22	5%	1/10W
R373	1-216-066-00	RES-CHIP	5.1K	5%	1/10W
R501	1-216-025-11	RES-CHIP	100	5%	1/10W
R502	1-216-025-11	RES-CHIP	100	5%	1/10W
R503	1-216-295-91	SHORT	0		
R504	1-216-295-91	SHORT	0		
R505	1-216-295-91	SHORT	0		
R506	1-216-009-91	RES-CHIP	22	5%	1/10W
R507	1-216-009-91	RES-CHIP	22	5%	1/10W
R508	1-216-025-11	RES-CHIP	100	5%	1/10W
R509	1-216-025-11	RES-CHIP	100	5%	1/10W
R510	1-216-043-91	RES-CHIP	560	5%	1/10W
R511	1-216-043-91	RES-CHIP	560	5%	1/10W
R512	1-216-043-91	RES-CHIP	560	5%	1/10W
R513	1-216-043-91	RES-CHIP	560	5%	1/10W
R514	1-216-043-91	RES-CHIP	560	5%	1/10W
R515	1-216-043-91	RES-CHIP	560	5%	1/10W
R516	1-216-049-11	RES-CHIP	1K	5%	1/10W
R517	1-216-049-11	RES-CHIP	1K	5%	1/10W
R518	1-216-295-91	SHORT	0		
R520	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R521	1-216-295-91	SHORT	0		
R523	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R524	1-216-295-91	SHORT	0		
R526	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R528	1-216-037-00	RES-CHIP	330	5%	1/10W
R529	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R530	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R531	1-216-031-00	RES-CHIP	180	5%	1/10W
R532	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R533	1-216-031-00	RES-CHIP	180	5%	1/10W
R534	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R535	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R536	1-216-049-11	RES-CHIP	1K	5%	1/10W
R537	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R540	1-216-049-11	RES-CHIP	1K	5%	1/10W
R548	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R549	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R550	1-208-756-11	METAL CHIP	82	0.5%	1/10W
R551	1-208-756-11	METAL CHIP	82	0.5%	1/10W
R552	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R553	1-216-295-91	SHORT	0		
R554	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R555	1-216-077-91	RES-CHIP	15K	5%	1/10W
R557	1-216-049-11	RES-CHIP	1K	5%	1/10W
R558	1-216-025-11	RES-CHIP	100	5%	1/10W
R559	1-216-077-91	RES-CHIP	15K	5%	1/10W
R560	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R561	1-216-043-91	RES-CHIP	560	5%	1/10W
R562	1-216-043-91	RES-CHIP	560	5%	1/10W
R563	1-216-043-91	RES-CHIP	560	5%	1/10W
R564	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R565	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R566	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R571	1-216-295-91	SHORT	0		
R572	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R575	1-208-756-11	METAL CHIP	82	0.5%	1/10W
R576	1-208-756-11	METAL CHIP	82	0.5%	1/10W
R577	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R578	1-208-750-11	METAL CHIP	47	0.5%	1/10W
R579	1-216-077-91	RES-CHIP	15K	5%	1/10W
R580	1-216-295-91	SHORT	0		
R582	1-216-041-00	RES-CHIP	470	5%	1/10W
R584	1-216-041-00	RES-CHIP	470	5%	1/10W
R586	1-216-049-11	RES-CHIP	1K	5%	1/10W
R587	1-216-049-11	RES-CHIP	1K	5%	1/10W
R589	1-216-049-11	RES-CHIP	1K	5%	1/10W
R590	1-216-049-11	RES-CHIP	1K	5%	1/10W
R591	1-216-049-11	RES-CHIP	1K	5%	1/10W
R592	1-216-049-11	RES-CHIP	1K	5%	1/10W
R594	1-216-041-00	RES-CHIP	470	5%	1/10W
R596	1-216-049-11	RES-CHIP	1K	5%	1/10W
R597	1-216-073-91	RES-CHIP	10K	5%	1/10W
R598	1-216-025-11	RES-CHIP	100	5%	1/10W
R600	1-216-066-00	RES-CHIP	5.1K	5%	1/10W
R601	1-216-073-91	RES-CHIP	10K	5%	1/10W
R602	1-216-073-91	RES-CHIP	10K	5%	1/10W
R603	1-216-073-91	RES-CHIP	10K	5%	1/10W
R604	1-216-033-00	RES-CHIP	220	5%	1/10W
R605	1-216-295-91	SHORT	0		
R608	1-216-295-91	SHORT	0		
R609	1-216-073-91	RES-CHIP	10K	5%	1/10W
R610	1-216-033-00	RES-CHIP	220	5%	1/10W
R611	1-216-073-91	RES-CHIP	10K	5%	1/10W
R613	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R615	1-216-089-91	RES-CHIP	47K	5%	1/10W
R616	1-216-073-91	RES-CHIP	10K	5%	1/10W
R617	1-216-295-91	SHORT	0		
R619	1-216-073-91	RES-CHIP	10K	5%	1/10W
R621	1-216-295-91	SHORT	0		
R622	1-216-295-91	SHORT	0		
R623	1-216-295-91	SHORT	0		
R624	1-216-295-91	SHORT	0		
R625	1-216-295-91	SHORT	0		
R626	1-216-073-91	RES-CHIP	10K	5%	1/10W
R628	1-216-295-91	SHORT	0		
R629	1-216-073-91	RES-CHIP	10K	5%	1/10W
R631	1-216-295-91	SHORT	0		
R634	1-216-295-91	SHORT	0		
R635	1-216-295-91	SHORT	0		
R638	1-216-295-91	SHORT	0		
R639	1-216-019-00	RES-CHIP	56	5%	1/10W
R640	1-216-009-91	RES-CHIP	22	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R642	1-216-295-91	SHORT	0		
R643	1-216-295-91	SHORT	0		
R645	1-216-295-91	SHORT	0		
R651	1-216-295-91	SHORT	0		
R653	1-216-025-11	RES-CHIP	100	5%	1/10W
R654	1-216-033-00	RES-CHIP	220	5%	1/10W
R655	1-216-295-91	SHORT	0		
R657	1-216-009-91	RES-CHIP	22	5%	1/10W
R658	1-216-049-11	RES-CHIP	1K	5%	1/10W
R659	1-216-025-11	RES-CHIP	100	5%	1/10W
R660	1-216-025-11	RES-CHIP	100	5%	1/10W
R661	1-216-025-11	RES-CHIP	100	5%	1/10W
R664	1-216-009-91	RES-CHIP	22	5%	1/10W
R665	1-216-035-00	RES-CHIP	270	5%	1/10W
R666	1-216-646-11	METAL CHIP	620	0.5%	1/10W
R667	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R668	1-216-009-91	RES-CHIP	22	5%	1/10W
R670	1-216-295-91	SHORT	0		
R671	1-216-073-91	RES-CHIP	10K	5%	1/10W
R672	1-216-073-91	RES-CHIP	10K	5%	1/10W
R673	1-216-073-91	RES-CHIP	10K	5%	1/10W
R674	1-216-073-91	RES-CHIP	10K	5%	1/10W
R675	1-216-073-91	RES-CHIP	10K	5%	1/10W
R676	1-216-073-91	RES-CHIP	10K	5%	1/10W
R677	1-216-073-91	RES-CHIP	10K	5%	1/10W
R678	1-216-073-91	RES-CHIP	10K	5%	1/10W
R679	1-216-073-91	RES-CHIP	10K	5%	1/10W
R680	1-216-073-91	RES-CHIP	10K	5%	1/10W
R681	1-216-073-91	RES-CHIP	10K	5%	1/10W
R682	1-216-073-91	RES-CHIP	10K	5%	1/10W
R683	1-216-073-91	RES-CHIP	10K	5%	1/10W
R684	1-216-073-91	RES-CHIP	10K	5%	1/10W
R685	1-216-073-91	RES-CHIP	10K	5%	1/10W
R686	1-216-073-91	RES-CHIP	10K	5%	1/10W
R687	1-216-295-91	SHORT	0		
R688	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R689	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R690	1-216-295-91	SHORT	0		
R691	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R692	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R693	1-216-009-91	RES-CHIP	22	5%	1/10W
R694	1-216-295-91	SHORT	0		
R695	1-216-047-91	RES-CHIP	820	5%	1/10W
R696	1-216-049-11	RES-CHIP	1K	5%	1/10W
R697	1-216-117-00	RES-CHIP	680K	5%	1/10W
R698	1-216-117-00	RES-CHIP	680K	5%	1/10W
R699	1-216-295-91	SHORT	0		
R801	1-216-009-91	RES-CHIP	22	5%	1/10W
R802	1-216-009-91	RES-CHIP	22	5%	1/10W
R804	1-216-073-91	RES-CHIP	10K	5%	1/10W
R806	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R807	1-208-778-11	METAL CHIP	680	0.5%	1/10W
R813	1-216-295-91	SHORT	0		
R814	1-216-073-91	RES-CHIP	10K	5%	1/10W
R815	1-216-073-91	RES-CHIP	10K	5%	1/10W
R816	1-216-073-91	RES-CHIP	10K	5%	1/10W
R817	1-216-017-91	RES-CHIP	47	5%	1/10W
R823	1-216-073-91	RES-CHIP	10K	5%	1/10W
R824	1-216-073-91	RES-CHIP	10K	5%	1/10W
R825	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R826	1-208-758-11	METAL CHIP	100	0.5%	1/10W

REF NO.	PART NO.	DESCRIPTION		REMARK	
R827	1-216-607-11	METAL CHIP	15	0.5%	1/10W
R831	1-216-295-91	SHORT	0		
R832	1-216-295-91	SHORT	0		
R833	1-216-295-91	SHORT	0		
R834	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R835	1-208-755-11	METAL CHIP	75	0.5%	1/10W
R836	1-211-960-11	METAL CHIP	22	0.5%	1/10W
R844	1-216-017-91	RES-CHIP	47	5%	1/10W
R845	1-216-017-91	RES-CHIP	47	5%	1/10W
R846	1-216-017-91	RES-CHIP	47	5%	1/10W
R847	1-216-017-91	RES-CHIP	47	5%	1/10W
R848	1-216-017-91	RES-CHIP	47	5%	1/10W
R849	1-216-017-91	RES-CHIP	47	5%	1/10W
R850	1-216-017-91	RES-CHIP	47	5%	1/10W
R851	1-216-017-91	RES-CHIP	47	5%	1/10W
R852	1-216-009-91	RES-CHIP	22	5%	1/10W
R853	1-216-009-91	RES-CHIP	22	5%	1/10W
R854	1-216-009-91	RES-CHIP	22	5%	1/10W
R855	1-216-009-91	RES-CHIP	22	5%	1/10W
R856	1-216-009-91	RES-CHIP	22	5%	1/10W
R857	1-216-009-91	RES-CHIP	22	5%	1/10W
R858	1-216-009-91	RES-CHIP	22	5%	1/10W
R859	1-216-009-91	RES-CHIP	22	5%	1/10W
R860	1-216-009-91	RES-CHIP	22	5%	1/10W
R861	1-216-009-91	RES-CHIP	22	5%	1/10W
R862	1-216-009-91	RES-CHIP	22	5%	1/10W
R863	1-216-009-91	RES-CHIP	22	5%	1/10W
R864	1-216-017-91	RES-CHIP	47	5%	1/10W
R865	1-216-017-91	RES-CHIP	47	5%	1/10W
R866	1-216-017-91	RES-CHIP	47	5%	1/10W
R867	1-216-017-91	RES-CHIP	47	5%	1/10W
R868	1-216-017-91	RES-CHIP	47	5%	1/10W
R869	1-216-017-91	RES-CHIP	47	5%	1/10W
R870	1-216-017-91	RES-CHIP	47	5%	1/10W
R871	1-216-017-91	RES-CHIP	47	5%	1/10W
R872	1-216-017-91	RES-CHIP	47	5%	1/10W
R873	1-216-017-91	RES-CHIP	47	5%	1/10W
R874	1-216-017-91	RES-CHIP	47	5%	1/10W
R875	1-216-017-91	RES-CHIP	47	5%	1/10W
R876	1-216-017-91	RES-CHIP	47	5%	1/10W
R877	1-216-017-91	RES-CHIP	47	5%	1/10W
R878	1-216-017-91	RES-CHIP	47	5%	1/10W
R879	1-216-017-91	RES-CHIP	47	5%	1/10W
R880	1-216-009-91	RES-CHIP	22	5%	1/10W
R881	1-216-009-91	RES-CHIP	22	5%	1/10W
R882	1-216-009-91	RES-CHIP	22	5%	1/10W
R883	1-216-009-91	RES-CHIP	22	5%	1/10W
R884	1-216-009-91	RES-CHIP	22	5%	1/10W
R885	1-216-009-91	RES-CHIP	22	5%	1/10W
R886	1-216-009-91	RES-CHIP	22	5%	1/10W
R887	1-216-009-91	RES-CHIP	22	5%	1/10W
R888	1-216-009-91	RES-CHIP	22	5%	1/10W
R889	1-216-295-91	SHORT	0		
R890	1-216-009-91	RES-CHIP	22	5%	1/10W
R891	1-216-017-91	RES-CHIP	47	5%	1/10W
R892	1-216-017-91	RES-CHIP	47	5%	1/10W
R893	1-216-017-91	RES-CHIP	47	5%	1/10W
R894	1-216-017-91	RES-CHIP	47	5%	1/10W
R895	1-216-017-91	RES-CHIP	47	5%	1/10W
R896	1-216-017-91	RES-CHIP	47	5%	1/10W
R897	1-216-017-91	RES-CHIP	47	5%	1/10W
R898	1-216-017-91	RES-CHIP	47	5%	1/10W

B3 BC4

REF NO.	PART NO.	DESCRIPTION		REMARK	
R899	1-216-073-91	RES-CHIP	10K	5%	1/10W
R901	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R902	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R903	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R904	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R905	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R906	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R907	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R908	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R909	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R910	1-216-049-11	RES-CHIP	1K	5%	1/10W
R911	1-216-049-11	RES-CHIP	1K	5%	1/10W
R912	1-216-049-11	RES-CHIP	1K	5%	1/10W
R914	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R916	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R923	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R924	1-216-073-91	RES-CHIP	10K	5%	1/10W
R926	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R929	1-216-025-11	RES-CHIP	100	5%	1/10W
R930	1-216-025-11	RES-CHIP	100	5%	1/10W
R931	1-216-041-00	RES-CHIP	470	5%	1/10W
R933	1-216-025-11	RES-CHIP	100	5%	1/10W
R934	1-216-025-11	RES-CHIP	100	5%	1/10W
R935	1-216-073-91	RES-CHIP	10K	5%	1/10W
R936	1-216-041-00	RES-CHIP	470	5%	1/10W
R937	1-216-025-11	RES-CHIP	100	5%	1/10W
R938	1-216-025-11	RES-CHIP	100	5%	1/10W
R940	1-216-295-91	SHORT	0		
R941	1-216-295-91	SHORT	0		
R942	1-216-037-00	RES-CHIP	330	5%	1/10W
R943	1-216-033-00	RES-CHIP	220	5%	1/10W
R944	1-216-295-91	SHORT	0		
R945	1-216-295-91	SHORT	0		
R951	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R952	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R956	1-216-089-91	RES-CHIP	47K	5%	1/10W
R957	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R958	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R959	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R960	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R961	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R962	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R979	1-216-295-91	SHORT	0		
R981	1-216-037-00	RES-CHIP	330	5%	1/10W
R982	1-216-037-00	RES-CHIP	330	5%	1/10W
R983	1-216-089-91	RES-CHIP	47K	5%	1/10W
R984	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R985	1-216-113-00	RES-CHIP	470K	5%	1/10W
R986	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R987	1-216-049-11	RES-CHIP	1K	5%	1/10W
R988	1-216-033-00	RES-CHIP	220	5%	1/10W
R989	1-216-081-00	RES-CHIP	22K	5%	1/10W
R990	1-216-113-00	RES-CHIP	470K	5%	1/10W
R991	1-216-295-91	SHORT	0		
R993	1-216-089-91	RES-CHIP	47K	5%	1/10W
R994	1-216-033-00	RES-CHIP	220	5%	1/10W
R995	1-216-033-00	RES-CHIP	220	5%	1/10W
R996	1-216-037-00	RES-CHIP	330	5%	1/10W
R998	1-216-073-91	RES-CHIP	10K	5%	1/10W
R2801	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R2802	1-208-754-11	METAL CHIP	68	0.5%	1/10W
R2803	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R2804	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R2805	1-208-755-11	METAL CHIP	75	0.5%	1/10W
R2806	1-211-960-11	METAL CHIP	22	0.5%	1/10W
R2807	1-216-295-91	SHORT	0		
R2808	1-216-295-91	SHORT	0		
R2813	1-216-295-91	SHORT	0		
R2815	1-216-295-91	SHORT	0		
R2817	1-216-295-91	SHORT	0		
R2818	1-216-295-91	SHORT	0		
R2820	1-216-295-91	SHORT	0		
R2822	1-216-295-91	SHORT	0		

RB001	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB002	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB003	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB004	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB005	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB006	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB007	1-239-414-11	NETWORK RESISTOR (CHIP) 150
RB008	1-239-414-11	NETWORK RESISTOR (CHIP) 150
RB009	1-239-414-11	NETWORK RESISTOR (CHIP) 150
RB010	1-239-414-11	NETWORK RESISTOR (CHIP) 150
RB011	1-239-414-11	NETWORK RESISTOR (CHIP) 150
RB012	1-239-414-11	NETWORK RESISTOR (CHIP) 150
RB013	1-239-621-11	NETWORK RESISTOR (CHIP) 22
RB014	1-239-621-11	NETWORK RESISTOR (CHIP) 22
RB015	1-239-621-11	NETWORK RESISTOR (CHIP) 22
RB016	1-239-621-11	NETWORK RESISTOR (CHIP) 22
RB017	1-239-621-11	NETWORK RESISTOR (CHIP) 22
RB018	1-239-621-11	NETWORK RESISTOR (CHIP) 22
RB019	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB020	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB021	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB022	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB023	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB024	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB025	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB026	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB027	1-239-409-11	NETWORK RESISTOR (CHIP) 47
RB701	1-239-711-91	NETWORK RESISTOR (CHIP) 0
RB702	1-239-711-91	NETWORK RESISTOR (CHIP) 0
RB703	1-239-711-91	NETWORK RESISTOR (CHIP) 0
RB704	1-239-711-91	NETWORK RESISTOR (CHIP) 0
RB705	1-239-711-91	NETWORK RESISTOR (CHIP) 0
RB706	1-239-711-91	NETWORK RESISTOR (CHIP) 0

<CRYSTAL>

X802	1-795-112-21	VIBRATOR, CRYSTAL
X901	1-760-014-11	VIBRATOR, CERAMIC

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BC4

REF NO.	PART NO.	DESCRIPTION			REMARK
*	A-1136-252-A	BC4 COMPLETE			
		**********			
	3-350-679-01	WASHER, FIBER			
		<CAPACITOR>			
C2003	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2005	1-163-131-00	CERAMIC CHIP	390PF	5.00%	50V
C2006	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C2010	1-163-102-00	CERAMIC CHIP	24PF	5.00%	50V
C2011	1-163-102-00	CERAMIC CHIP	24PF	5.00%	50V
C2015	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2016	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2017	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2018	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2021	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C2024	1-216-295-91	SHORT	0		
C2029	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2030	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2031	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2032	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2033	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2034	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2035	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2036	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2037	1-126-947-11	ELECT	47UF	20.00%	16V
C2038	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2039	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2040	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2041	1-126-924-11	ELECT	330UF	20.00%	6.3V
C2042	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2044	1-126-947-11	ELECT	47UF	20.00%	16V
C2045	1-163-106-00	CERAMIC CHIP	36PF	5.00%	50V
C2046	1-126-964-11	ELECT	10UF	20.00%	50V
C2047	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C2048	1-126-964-11	ELECT	10UF	20.00%	50V
C2049	1-126-960-11	ELECT	1UF	20.00%	50V
C2050	1-163-231-11	CERAMIC CHIP	15PF	5.00%	50V
C2051	1-126-964-11	ELECT	10UF	20.00%	50V
C2052	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C2053	1-126-960-11	ELECT	1UF	20.00%	50V
C2054	1-126-947-11	ELECT	47UF	20.00%	16V
C2055	1-126-947-11	ELECT	47UF	20.00%	16V
C2056	1-163-231-11	CERAMIC CHIP	15PF	5.00%	50V
C2057	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2058	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2059	1-126-947-11	ELECT	47UF	20.00%	16V
C2060	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2061	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2062	1-126-947-11	ELECT	47UF	20.00%	16V
C2063	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2064	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2065	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2066	1-126-947-11	ELECT	47UF	20.00%	16V
C2067	1-126-947-11	ELECT	47UF	20.00%	16V
C2068	1-126-947-11	ELECT	47UF	20.00%	16V
C2069	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2070	1-126-947-11	ELECT	47UF	20.00%	16V
C2071	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C2072	1-163-237-11	CERAMIC CHIP	27PF	5.00%	50V
C2074	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C2075	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C2078	1-126-947-11	ELECT	47UF	20.00%	16V
C2079	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2080	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C2095	1-163-231-11	CERAMIC CHIP	15PF	5.00%	50V
C2096	1-163-231-11	CERAMIC CHIP	15PF	5.00%	50V
C2097	1-163-231-11	CERAMIC CHIP	15PF	5.00%	50V
		<CONNECTOR>			
CN2001	* 1-793-685-11	PIN, CONNECTOR (PC BOARD) 15P			
		<FERRITE BEAD>			
FB2002	1-414-234-22	FERRITE	0UH		
FB2008	1-414-234-22	FERRITE	0UH		
FB2009	1-414-234-22	FERRITE	0UH		
FB2010	1-414-234-22	FERRITE	0UH		
FB2011	1-414-234-22	FERRITE	0UH		
FB2012	1-414-234-22	FERRITE	0UH		
FB2014	1-414-234-22	FERRITE	0UH		
FB2015	1-414-234-22	FERRITE	0UH		
FB2016	1-414-234-22	FERRITE	0UH		
FB2017	1-414-234-22	FERRITE	0UH		
		<FILTER>			
FL2001	1-239-848-11	FILTER, LOW PASS			
FL2002	1-239-848-11	FILTER, LOW PASS			
FL2003	1-239-848-11	FILTER, LOW PASS			
FL2004	1-239-848-11	FILTER, LOW PASS			
FL2005	1-233-736-21	FILTER, EMI			
FL2006	1-233-736-21	FILTER, EMI			
FL2007	1-233-736-21	FILTER, EMI			
		<IC>			
IC2003	8-759-568-27	MSM514265C-60JS			
IC2004	8-759-594-44	UPD64082GF-3BA			
IC2005	8-759-431-14	PQ3TZ53U			
		<COIL>			
L2001	1-410-200-31	INDUCTOR	4.7UH		
L2004	1-412-058-11	INDUCTOR	10UH		
L2005	1-412-058-11	INDUCTOR	10UH		
L2006	1-412-058-11	INDUCTOR	10UH		
L2007	1-412-058-11	INDUCTOR	10UH		
L2008	1-412-058-11	INDUCTOR	10UH		
		<TRANSISTOR>			
Q2002	8-729-216-22	2SA1162-G			
Q2003	8-729-216-22	2SA1162-G			
Q2004	8-729-216-22	2SA1162-G			
Q2005	8-729-422-33	2SD601A-Q-TX			
Q2006	8-729-422-33	2SD601A-Q-TX			
Q2007	8-729-422-33	2SD601A-Q-TX			
Q2008	8-729-422-33	2SD601A-Q-TX			

BC4 C

REF NO.	PART NO.	DESCRIPTION			REMARK
Q2009	8-729-422-33	2SD601A-Q-TX			
Q2010	8-729-422-33	2SD601A-Q-TX			
Q2011	8-729-422-33	2SD601A-Q-TX			
Q2012	8-729-216-22	2SA1162-G			
Q2013	8-729-216-22	2SA1162-G			
Q2014	8-729-422-33	2SD601A-Q-TX			
Q2015	8-729-422-33	2SD601A-Q-TX			
Q2016	8-729-422-33	2SD601A-Q-TX			
Q2018	8-729-216-22	2SA1162-G			
Q2019	8-729-422-33	2SD601A-Q-TX			
		<RESISTOR>			
R2001	1-216-097-11	RES-CHIP	100K	5%	1/10W
R2011	1-216-041-00	RES-CHIP	470	5%	1/10W
R2015	1-216-041-00	RES-CHIP	470	5%	1/10W
R2019	1-216-295-91	SHORT	0		
R2021	1-216-025-11	RES-CHIP	100	5%	1/10W
R2027	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2028	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2029	1-216-043-91	RES-CHIP	560	5%	1/10W
R2030	1-216-043-91	RES-CHIP	560	5%	1/10W
R2031	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R2032	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R2033	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2034	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2035	1-216-043-91	RES-CHIP	560	5%	1/10W
R2036	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R2037	1-216-044-00	RES-CHIP	620	5%	1/10W
R2039	1-216-047-91	RES-CHIP	820	5%	1/10W
R2040	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2041	1-216-047-91	RES-CHIP	820	5%	1/10W
R2042	1-216-075-00	RES-CHIP	12K	5%	1/10W
R2043	1-216-085-91	RES-CHIP	33K	5%	1/10W
R2044	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2046	1-216-075-00	RES-CHIP	12K	5%	1/10W
R2047	1-216-085-91	RES-CHIP	33K	5%	1/10W
R2048	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2049	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R2050	1-216-017-91	RES-CHIP	47	5%	1/10W
R2051	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2052	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2053	1-216-041-00	RES-CHIP	470	5%	1/10W
R2054	1-216-041-00	RES-CHIP	470	5%	1/10W
R2055	1-216-017-91	RES-CHIP	47	5%	1/10W
R2056	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R2057	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2058	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R2059	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2060	1-216-025-11	RES-CHIP	100	5%	1/10W
R2061	1-216-043-91	RES-CHIP	560	5%	1/10W
R2062	1-216-105-91	RES-CHIP	220K	5%	1/10W
R2063	1-216-089-91	RES-CHIP	47K	5%	1/10W
R2064	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2066	1-216-033-00	RES-CHIP	220	5%	1/10W
R2067	1-216-043-91	RES-CHIP	560	5%	1/10W
R2069	1-216-645-11	METAL CHIP	560	0.5%	1/10W
R2070	1-216-641-11	METAL CHIP	390	0.5%	1/10W
R2071	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R2072	1-216-043-91	RES-CHIP	560	5%	1/10W
R2073	1-216-049-11	RES-CHIP	1K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R2074	1-216-025-11	RES-CHIP	100	5%	1/10W
R2075	1-216-295-91	SHORT	0		
R2076	1-216-025-11	RES-CHIP	100	5%	1/10W
R2077	1-216-025-11	RES-CHIP	100	5%	1/10W
R2078	1-216-295-91	SHORT	0		
R2092	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R2093	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R2104	1-216-295-91	SHORT	0		
R2105	1-216-295-91	SHORT	0		
R2106	1-216-295-91	SHORT	0		
R2107	1-216-295-91	SHORT	0		
R2108	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2110	1-216-295-91	SHORT	0		
R2112	1-216-295-91	SHORT	0		
R2113	1-216-017-91	RES-CHIP	47	5%	1/10W
R2115	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2116	1-216-295-91	SHORT	0		
R2117	1-216-295-91	SHORT	0		
R2118	1-216-296-11	SHORT	0		
R2119	1-216-296-11	SHORT	0		
R2200	1-216-296-11	SHORT	0		
		<VARIABLE RESISTOR>			
RV2001	1-223-271-21	RES, ADJ, CERMET 220			
		<CRYSTAL>			
X2001	1-767-606-11	VIBRATOR, CRYSTAL			
		**********			
*	A-1332-227-A	C BOARD MOUNTED			
		**********			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C9002	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9003	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9004	1-162-114-00	CERAMIC	0.0047UF		2KV
C9005	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9006	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C9007	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C9008	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C9009	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9010	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9011	1-136-207-11	MYLAR	0.047UF	10.00%	250V
C9012	1-136-207-11	MYLAR	0.047UF	10.00%	250V
C9014	1-136-207-11	MYLAR	0.047UF	10.00%	250V
C9015	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9018	1-107-961-91	ELECT	10UF	20.00%	250V
C9019	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C9020	1-107-961-91	ELECT	10UF	20.00%	250V
C9021	1-107-961-91	ELECT	10UF	20.00%	250V
C9022	1-101-004-00	CERAMIC	0.01UF		50V
C9023	1-101-004-00	CERAMIC	0.01UF		50V
C9024	1-165-319-11	CERAMIC CHIP	0.1UF		50V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

C

REF NO.		PART NO.	DESCRIPTION			REMARK
C9025		1-104-653-11	ELECT	220UF	20.00%	16V
C9026		1-165-319-11	CERAMIC CHIP	0.1UF		50V
C9027		1-101-004-00	CERAMIC	0.01UF		50V
C9028		1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C9029		1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C9030		1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C9031		1-162-114-00	CERAMIC	0.0047UF		2KV
C9032		1-162-116-00	CERAMIC	680PF	10.00%	2KV
C9033		1-107-662-11	ELECT	22UF	20.00%	250V
C9035		1-162-114-00	CERAMIC	0.0047UF		2KV
C9042		1-104-661-91	ELECT	330UF	20.00%	16V
			<CONNECTOR>			
CN9001	*	1-564-512-11	PLUG, CONNECTOR 9P			
CN9002		1-691-765-11	PLUG (MICRO CONNECTOR) 3P			
CN9003		1-695-915-11	TAB (CONTACT)			
CN9004		1-695-915-11	TAB (CONTACT)			
CN9007		1-785-879-11	CONNECTOR, ONE TOUCH			
			<DIODE>			
D9002		8-719-400-75	MA3091			
D9005		8-719-404-50	MA111-TX			
D9006		8-719-051-85	HSS83TD			
D9007		8-719-051-85	HSS83TD			
D9008		8-719-051-85	HSS83TD			
D9009		8-719-908-03	GP08D			
D9010		8-719-110-17	RD10ESB2			
D9011		8-719-404-50	MA111-TX			
D9012		8-719-404-50	MA111-TX			
D9013		8-719-404-50	MA111-TX			
			<IC>			
IC9001		8-759-360-83	TDA6111Q/N4			
IC9002		8-759-360-83	TDA6111Q/N4			
IC9003		8-759-360-83	TDA6111Q/N4			
			<JACK>			
J9001	⚠	1-540-071-22	SOCKET, CRT			
			<COIL>			
L9001		1-414-158-11	INDUCTOR	2.2UH		
L9002		1-408-591-11	INDUCTOR	1UH		
L9003		1-408-591-11	INDUCTOR	1UH		
L9004		1-408-591-11	INDUCTOR	1UH		
L9005		1-406-666-21	INDUCTOR	150UH		
L9006		1-412-526-11	INDUCTOR	12UH		
			<NEON LAMP>			
NL9001		1-519-526-11	LAMP, NEON			
NL9003		1-519-421-11	GAP, DISCHARGE			

REF NO.	PART NO.	DESCRIPTION			REMARK
		<TRANSISTOR>			
Q9001	8-729-026-49	2SA1037AK-T146-R			
Q9009	8-729-026-49	2SA1037AK-T146-R			
Q9010	8-729-026-49	2SA1037AK-T146-R			
Q9011	8-729-026-49	2SA1037AK-T146-R			
		<RESISTOR>			
R9001	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R9004	1-216-105-91	RES-CHIP	220K	5%	1/10W
R9006	1-216-073-91	RES-CHIP	10K	5%	1/10W
R9007	1-208-789-11	METAL CHIP	2K	0.5%	1/10W
R9008	1-216-085-91	RES-CHIP	33K	5%	1/10W
R9012	1-216-049-11	RES-CHIP	1K	5%	1/10W
R9013	1-216-049-11	RES-CHIP	1K	5%	1/10W
R9018	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R9019	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R9021	1-216-295-91	SHORT	0		
R9023	1-216-295-91	SHORT	0		
R9026	1-208-789-11	METAL CHIP	2K	0.5%	1/10W
R9031	1-208-789-11	METAL CHIP	2K	0.5%	1/10W
R9033	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R9034	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R9035	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R9036	1-216-049-11	RES-CHIP	1K	5%	1/10W
R9037	1-240-233-21	METAL OXIDE	100K	5%	3W
R9038	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R9039	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R9041	1-216-049-11	RES-CHIP	1K	5%	1/10W
R9042	1-216-049-11	RES-CHIP	1K	5%	1/10W
R9043	1-240-233-21	METAL OXIDE	100K	5%	3W
R9044	1-240-233-21	METAL OXIDE	100K	5%	3W
R9047	1-202-557-00	SOLID	220	20%	1/2W
R9048	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R9049	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R9050	1-249-424-11	CARBON	3.9K	5%	1/4W
R9051	1-202-557-00	SOLID	220	20%	1/2W
R9052	1-202-557-00	SOLID	220	20%	1/2W
R9053	1-249-424-11	CARBON	3.9K	5%	1/4W
R9054	1-249-424-11	CARBON	3.9K	5%	1/4W
R9055	1-243-994-91	CEMENTED	820K	5%	0.5W
R9056	1-219-752-11	CARBON	100K	5%	1/2W
R9057	1-220-827-91	RESISTOR	560K	5%	1/2W
R9058	1-243-994-91	CEMENTED	820K	5%	0.5W
R9059	1-219-746-11	CARBON	1K	5%	1/2W
R9061	1-219-743-11	CARBON	100	5%	1/2W
R9065	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R9068	1-216-101-00	RES-CHIP	150K	5%	1/10W
R9069	1-219-743-11	CARBON	100	5%	1/2W
R9070	1-216-037-00	RES-CHIP	330	5%	1/10W
R9071	1-216-037-00	RES-CHIP	330	5%	1/10W
R9072	1-216-037-00	RES-CHIP	330	5%	1/10W
R9073	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
		<VARIABLE RESISTOR>			
RV9001	1-241-656-11	RES, ADJ, METAL FILM 110M			
RV9002	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M			

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The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

D

REF NO.		PART NO.	DESCRIPTION		REMARK	
		A-1348-119-A	D BOARD COMPLETE (KV-ES38M31)			
		A-1348-113-A	D BOARD COMPLETE (KV-ES38M61/ES38M90/ES38M91)			
			**********			
	*	4-374-846-01	COVER, CAPACITOR, CAP TYPE			
		4-382-854-11	SCREW (M3X10), P, SW (+)			
		4-382-854-21	SCREW (M3X14), P, SW (+)			
			<CAPACITOR>			
C6601		1-126-933-11	ELECT	100UF	20.00%	16V
C6602		1-129-720-00	FILM	0.033UF	5.00%	630V
C6604		1-126-947-11	ELECT	47UF	20.00%	16V
C6607	⚠	1-119-886-51	CERAMIC	470PF	10.00%	250V
C6608	⚠	1-119-886-51	CERAMIC	470PF	10.00%	250V
C6613		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C6614		1-161-830-00	CERAMIC	0.0047UF		500V
C6617		1-161-830-00	CERAMIC	0.0047UF		500V
C6619		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C6621		1-131-940-11	ELECT	1200UF	20%	250V
C6622		1-131-940-11	ELECT	1200UF	20%	250V
C6625		1-129-718-00	FILM	0.022UF	5.00%	630V
C6626		1-130-029-00	FILM	8200PF	2.00%	50V
C6627		1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6628		1-104-330-91	CERAMIC	470PF	10.00%	1KV
C6630		1-107-680-91	ELECT	22UF	20.00%	450V
C6631		1-126-964-11	ELECT	10UF	20.00%	50V
C6632		1-126-963-11	ELECT	4.7UF	20.00%	50V
C6633		1-126-947-11	ELECT	47UF	20.00%	25V
C6634		1-126-968-11	ELECT	100UF	20.00%	50V
C6635		1-102-973-00	CERAMIC	100PF	5.00%	50V
C6637		1-109-879-11	CERAMIC	22PF	5.00%	2KV
C6638		1-107-906-11	ELECT	10UF	20.00%	50V
C6639		1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C6640		1-104-330-91	CERAMIC	470PF	10.00%	1KV
C6641		1-136-189-00	MYLAR	0.1UF	10.00%	250V
C6642		1-126-964-11	ELECT	10UF	20.00%	50V
C6643		1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C6648		1-126-935-11	ELECT	470UF	20.00%	16V
C6649		1-126-933-11	ELECT	100UF	20.00%	16V
C6650		1-162-115-00	CERAMIC	330PF	10.00%	1KV
C6651		1-162-115-00	CERAMIC	330PF	10.00%	1KV
C6652		1-110-626-11	ELECT	330UF	20.00%	160V
C6653		1-137-368-11	MYLAR	0.0047UF	5.00%	50V
C6654		1-126-936-11	ELECT	3300UF	20.00%	16V
C6655		1-126-942-61	ELECT	1000UF	20.00%	25V
C6656		1-136-165-00	FILM	0.1UF	5.00%	50V
C6658		1-126-944-11	ELECT	3300UF	20.00%	25V
C6659		1-126-944-11	ELECT	3300UF	20.00%	25V
C6660		1-126-960-11	ELECT	1UF	20.00%	50V
C6661		1-107-888-11	ELECT	47UF	20.00%	25V
C6662		1-126-947-11	ELECT	47UF	20.00%	16V
C6663		1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6664		1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6665		1-126-964-11	ELECT	10UF	20.00%	50V
C6666		1-137-150-11	MYLAR	0.01UF	5.00%	50V
C6668		1-126-947-11	ELECT	47UF	20.00%	16V
C6669		1-162-115-00	CERAMIC	330PF	10.00%	1KV
C6670		1-162-115-00	CERAMIC	330PF	10.00%	1KV
C6671		1-129-718-00	FILM	0.022UF	5.00%	630V

REF NO.	PART NO.	DESCRIPTION		REMARK	
C6672	1-104-331-11	CERAMIC	0.0022UF	10.00%	1KV
C6673	1-104-331-11	CERAMIC	0.0022UF	10.00%	1KV
C6674	1-128-527-11	ELECT	330UF	20.00%	25V
C6678	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C6679	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C6680	1-136-157-00	FILM	0.022UF	5.00%	50V
C6800	1-126-964-11	ELECT	10UF	20.00%	50V
C6801	1-126-960-11	ELECT	1UF	20.00%	50V
C6802	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6803	1-102-129-00	CERAMIC	0.01UF	10.00%	50V
C6804	1-102-129-00	CERAMIC	0.01UF	10.00%	50V
C6805	1-111-087-11	ELECT	330UF	20.00%	25V
C6806	1-107-933-11	ELECT	100UF	20.00%	100V
C6808	1-137-401-11	MYLAR	0.22UF	10.00%	100V
C6809	1-102-074-00	CERAMIC	0.001UF	10.00%	50V
C6810	1-106-220-00	MYLAR	0.1UF	10.00%	100V
C6811	1-111-087-11	ELECT	330UF	20.00%	25V
C6812	1-130-785-11	MYLAR	0.47UF	10.00%	100V
C6813	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C6814	1-115-565-11	CERAMIC CHIP	2.2UF	10.00%	10V
C6815	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C6816	1-137-577-11	FILM	0.068UF	5.00%	400V
C6817	1-126-947-11	ELECT	47UF	20.00%	16V
C6818	1-126-960-11	ELECT	1UF	20.00%	50V
C6819	1-126-960-11	ELECT	1UF	20.00%	50V
C6820	1-102-114-00	CERAMIC	470PF	10.00%	50V
C6821	1-106-383-00	MYLAR	0.047UF	10.00%	200V
C6822	1-102-114-00	CERAMIC	470PF	10.00%	50V
C6823	1-106-383-00	MYLAR	0.047UF	10.00%	200V
C6826	1-102-030-00	CERAMIC	330PF	10.00%	500V
C6827	1-102-030-00	CERAMIC	330PF	10.00%	500V
C6828	1-107-364-11	MYLAR	0.01UF	10.00%	200V
C6829	1-162-115-00	CERAMIC	330PF	10.00%	2KV
C6830	1-117-619-11	FILM	1000PF	3.00%	1.2KV
C6831	1-117-838-21	FILM	8200PF	3.00%	1.5KV
C6832	1-117-842-21	FILM	12000PF	3.00%	1.5KV
C6833	1-127-680-11	FILM MELF	4700PF	2%	100V
C6834	1-125-893-11	FILM	680PF	3.00%	1.5KV
C6835	1-125-893-11	FILM	680PF	3.00%	1.5KV
C6836	1-127-681-11	FILM MELF	10000PF	2%	100V
C6837	1-125-893-11	FILM	680PF	3.00%	1.5KV
C6838	1-125-893-11	FILM	680PF	3.00%	1.5KV
C6839	1-126-933-11	ELECT	100UF	20.00%	16V
C6840	1-126-933-11	ELECT	100UF	20.00%	16V
C6841	1-115-511-11	FILM	0.12UF	5.00%	250V
C6842	1-117-673-11	FILM	1.5UF	5.00%	250V
C6843	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C6844	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C6845	1-117-664-11	FILM	0.27UF	5.00%	250V
C6846	1-115-514-11	FILM	0.22UF	5.00%	250V
C6847	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C6848	1-113-979-51	FILM	0.047UF	5%	250V
C6849	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C6850	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C6851	1-107-639-11	ELECT	47UF	20.00%	160V
C6853	1-102-228-00	CERAMIC	470PF	10.00%	500V
C6854	1-126-941-11	ELECT	470UF	20.00%	25V
C6855	1-123-024-21	ELECT	33UF		160V
C6856	1-126-971-11	ELECT	470UF	20.00%	50V
C6857	1-102-228-00	CERAMIC	470PF	10.00%	500V
C6858	1-102-228-00	CERAMIC	470PF	10.00%	500V
C6859	1-162-129-00	CERAMIC	150PF	10.00%	2KV

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REF NO.	PART NO.	DESCRIPTION		REMARK
C6860	1-162-129-00	CERAMIC	150PF 10.00% 2KV	
C6862	1-130-202-00	FILM	0.022UF 5.00% 200V	
C6863	1-107-906-11	ELECT	10UF 20.00% 50V	
C6864	1-129-898-00	FILM	0.0022UF 5.00% 630V	
C6865	1-130-202-00	FILM	0.022UF 5.00% 400V	
C6866	1-102-030-00	CERAMIC	330PF 10.00% 500V	
C6867	1-130-785-11	MYLAR	0.47UF 10.00% 100V	
C6868	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V	
C6869	1-107-882-91	ELECT	100UF 20.00% 16V	
C6870	1-128-528-11	ELECT	470UF 20.00% 25V	
C6871	1-163-133-00	CERAMIC CHIP	470PF 5.00% 50V	
C6872	1-163-275-11	CERAMIC CHIP	0.001UF 5.00% 50V	
C6874	1-136-165-00	FILM	0.1UF 5.00% 50V	
C6875	1-126-947-11	ELECT	47UF 20.00% 16V	
C6876	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V	
C6877	1-126-964-11	ELECT	10UF 20.00% 50V	
C6878	1-126-320-11	ELECT	10UF 20.00% 16V	
C6879	1-107-960-11	ELECT	4.7UF 20.00% 160V	
C6880	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V	
C6882	1-104-574-11	CERAMIC	0.0047UF 10.00% 2KV	
C6883	1-126-965-91	ELECT	22UF 20.00% 50V	
C6884	1-115-565-11	CERAMIC CHIP	2.2UF 10.00% 10V	
		<CONNECTOR>		
CN6602⚠	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P		
CN6603⚠	*1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P		
CN6604⚠	*1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P		
CN6605⚠	*1-764-333-11	PLUG, CONNECTOR 10P		
CN6606 *	1-564-510-11	PLUG, CONNECTOR 7P		
CN6608 *	1-564-506-11	PLUG, CONNECTOR 3P		
CN6609 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6610 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6611 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6612 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6613 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6614 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6615 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6616 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6618 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6800	1-785-802-11	PIN, CONNECTOR (WITH PWB) 20P		
CN6801⚠	*1-785-270-12	PIN, DY CONNECTOR (PC BOARD)		
CN6802	1-793-495-11	CONNECTOR, BOARD TO BOARD 50P		
CN6810	1-785-879-11	CONNECTOR, ONE TOUCH		
CN6811 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
CN6812 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P		
		<DIODE>		
D6601	8-719-911-19	1SS119-25		
D6605	8-719-510-53	D4SB60L		
D6612	8-719-911-55	U05G		
D6613	8-719-911-55	U05G		
D6614	8-719-110-30	RD12ES-B1		
D6615	8-719-911-19	1SS119-25		
D6616	8-719-911-55	U05G		
D6617	8-719-911-55	U05G		
D6618	8-719-404-50	MA111-TX		
D6619	8-719-110-30	RD12ES-B1		
D6621	8-719-063-73	DIODE D1NL20U-TR		
D6622	8-719-979-64	UF4005PKG23		
D6623	8-719-059-23	P6KE200AG23		
D6624	8-719-510-02	D1NS4		
D6625	8-719-110-36	RD13ES-B2		
D6626	8-719-979-64	UF4005PKG23		
D6628	8-719-063-73	DIODE D1NL20U-TR		
D6631	8-719-050-18	D4SBL20U		
D6633	8-719-510-12	D10SC4M		
D6634	8-719-060-88	DIODE D4SBS6		
D6635	8-719-110-47	RD18ESB		
D6636	8-719-911-19	1SS119-25		
D6639	8-719-063-73	DIODE D1NL20U-TR		
D6640	8-719-110-72	RD30ESB2		
D6641	8-719-109-96	RD6.8ES-B1		
D6642	8-719-911-19	1SS119-25		
D6643	8-719-979-64	UF4005PKG23		
D6644	8-719-052-92	D10SBS4F		
D6650	8-719-911-19	1SS119-25		
D6800	8-719-110-03	RD7.5ESB2		
D6801	8-719-911-19	1SS119-25		
D6803	8-719-510-73	S3L20UF4		
D6805	8-719-110-39	RD15ES-B1		
D6806	8-719-911-19	1SS119-25		
D6807	8-719-109-68	RD3.6ES-B1		
D6808	8-719-914-43	DAN202K		
D6809	8-719-908-03	GP08D		
D6813	8-719-302-43	EL1Z		
D6814	8-719-018-82	RGP02-20EL-6394		
D6816	8-719-510-73	S3L20UF4		
D6817	8-719-510-73	S3L20UF4		
D6820	8-719-970-87	ERA38-06		
D6821	8-719-970-87	ERA38-06		
D6822	8-719-067-18	RN4Z		
D6823	8-719-911-19	1SS119-25		
D6824	8-719-510-73	S3L20UF4		
D6825	8-719-914-43	DAN202K		
D6826	8-719-911-19	1SS119-25		
		<FERRITE BEAD>		
FB6602	1-239-358-21	FILTER, NOISE		
FB6603	1-239-358-21	FILTER, NOISE		
		<IC>		
IC6603	8-749-016-66	MCR5152		
IC6604	8-759-468-89	TOP209P		
IC6606	8-759-450-47	BA05T		
IC6607	8-749-012-13	DM-58		
IC6800	8-759-192-71	STV9379		
IC6801	8-759-450-95	LM393N		
IC6804	8-759-394-36	BA09T		
IC6805	8-759-394-35	BA12T		
IC6806	8-749-013-76	PQ6RD83B		
		<CHIP CONDUCTOR>		
JR6601	1-216-295-91	SHORT	0	
JR6603	1-216-295-91	SHORT	0	
JR6605	1-216-296-11	SHORT	0	
JR6606	1-216-296-11	SHORT	0	
JR6607	1-216-295-91	SHORT	0	

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REF NO.	PART NO.	DESCRIPTION		REMARK
JR6608	1-216-296-11	SHORT	0	
JR6609	1-216-295-91	SHORT	0	
JR6610	1-216-296-11	SHORT	0	
JR6613	1-216-295-91	SHORT	0	
JR6802	1-216-296-11	SHORT	0	
JR6810	1-216-296-11	SHORT	0	
		<COIL>		
L6601	1-412-525-31	INDUCTOR	10UH	
L6602	1-410-397-21	FERRITE	1.1UH	
L6603	1-410-397-21	FERRITE	1.1UH	
L6604	1-412-525-31	INDUCTOR	10UH	
L6605	1-412-525-31	INDUCTOR	10UH	
L6606	1-412-525-31	INDUCTOR	10UH	
L6607	1-412-519-11	INDUCTOR	3.3UH	
L6800	1-412-525-31	INDUCTOR	10UH	
L6801	1-406-986-21	INDUCTOR	3.3UH	
L6802	1-416-775-21	INDUCTOR	1MH	
L6803	1-406-982-11	INDUCTOR	680UH	
L6804	1-412-519-11	INDUCTOR	3.3UH	
L6805	1-412-519-11	INDUCTOR	3.3UH	
L6806	1-412-519-11	INDUCTOR	3.3UH	
L6807	1-412-552-11	INDUCTOR	2.2MH	
L6808	1-406-674-11	INDUCTOR	3.3MH	
		<PHOTO COUPLER>		
PH6601	8-749-924-35	ON3171-R		
PH6602	8-749-924-35	ON3171-R		
		<IC LINK>		
PS6605	1-533-597-41	LINK, IC		
PS6606	1-533-597-41	LINK, IC		
PS6607	1-533-597-41	LINK, IC		
PS6801	1-532-841-21	LINK, IC		
		<TRANSISTOR>		
Q6601	8-729-119-78	2SC2785-HFE		
Q6604	8-729-119-76	2SA1175-HFE		
Q6605	8-729-230-49	2SC2712-YG		
Q6606	8-729-140-93	2SB733-34		
Q6608	8-729-200-21	2SC2500-B		
Q6609	8-729-029-56	DTA144ESA		
Q6610	8-729-119-78	2SC2785-HFE		
Q6611	8-729-029-66	DTC114ESA		
Q6612	8-729-029-66	DTC114ESA		
Q6613	8-729-030-02	DTC144ESA		
Q6800	8-729-422-33	2SD601A-Q-TX		
Q6801	8-729-039-68	IRF620		
Q6802	8-729-025-19	IRFI740G		
Q6803	8-729-119-76	2SA1175-HFE		
Q6804	8-729-119-78	2SC2785-HFE		
Q6805	8-729-140-96	2SD774-34		
Q6806	8-729-140-96	2SD774-34		
Q6807	8-729-046-18	2SC5480-01		
Q6808	8-729-046-18	2SC5480-01		
Q6809	8-729-038-83	TRANSISTOR 2SK2251-01-F19		
Q6810	8-729-047-60	IRFI830G-LF49		
Q6811	1-801-806-11	TR DTC144EKA		
Q6812	8-729-043-95	2SC3840(3)		
Q6813	8-729-422-33	2SD601A-Q-TX		
Q6814	8-729-026-49	2SA1037AK-T146-R		
Q6815	8-729-045-65	2SA1776TV2Q		
Q6816	8-729-140-96	2SD774-34		
Q6817	8-729-422-33	2SD601A-Q-TX		
Q6818	1-801-806-11	TR DTC144EKA		
Q6819	1-801-806-11	TR DTC144EKA		
Q6820	8-729-422-33	2SD601A-Q-TX		
Q6821	8-729-026-49	2SA1037AK-T146-R		
Q6822	8-729-026-49	2SA1037AK-T146-R		
Q6823	8-729-422-33	2SD601A-Q-TX		
		<RESISTOR>		
R6500	1-220-797-11	CEMENTED	0.47	5% 10W
R6600	1-216-295-91	SHORT	0	
R6602	1-249-417-11	CARBON	1K	5% 1/4W
R6622	1-220-797-11	CEMENTED	0.47	5% 10W
R6638	1-240-876-11	CEMENTED	1	5% 15W
R6639	1-240-876-11	CEMENTED	1	5% 15W
R6641	1-260-131-11	CARBON	470K	5% 1/2W
R6642	1-260-131-11	CARBON	470K	5% 1/2W
R6645	1-202-933-61	FUSIBLE	0.1	10% 1/2W
R6647	1-215-864-00	METAL OXIDE	150	5% 1W
R6648	1-215-481-00	METAL	330K	1% 1/4W
R6649	1-216-065-91	RES-CHIP	4.7K	5% 1/10W
R6650	1-215-481-00	METAL	330K	1% 1/4W
R6651	1-215-430-00	METAL	2.4K	1% 1/4W
R6652	1-215-450-00	METAL	16K	1% 1/4W
R6653	1-219-776-11	CARBON	2.2M	10% 1/2W
R6654	1-216-089-91	RES-CHIP	47K	5% 1/10W
R6655	1-216-073-91	RES-CHIP	10K	5% 1/10W
R6656	1-215-481-00	METAL	330K	1% 1/4W
R6657	1-247-791-91	CARBON	22	5% 1/4W
R6658	1-216-073-91	RES-CHIP	10K	5% 1/10W
R6659	1-216-073-91	RES-CHIP	10K	5% 1/10W
R6660	1-249-389-11	CARBON	4.7	5% 1/4W
R6661	1-215-421-00	METAL	1K	1% 1/4W
R6662	1-216-381-11	METAL OXIDE	0.22	5% 3W
R6663	1-216-381-11	METAL OXIDE	0.22	5% 3W
R6665	1-219-776-11	CARBON	2.2M	10% 1/2W
R6666	1-208-782-11	METAL CHIP	1K	0.5% 1/10W
R6667	1-249-413-11	CARBON	470	5% 1/4W
R6668	1-216-017-91	RES-CHIP	47	5% 1/10W
R6669	1-249-417-11	CARBON	1K	5% 1/4W
R6672	1-249-421-11	CARBON	2.2K	5% 1/4W
R6674	1-249-418-11	CARBON	1.2K	5% 1/4W
R6679	1-249-437-11	CARBON	47K	5% 1/4W
R6680	1-216-362-11	METAL OXIDE	0.27	5% 2W
R6681	1-249-429-11	CARBON	10K	5% 1/4W
R6682	1-249-416-11	CARBON	820	5% 1/4W
R6683	1-260-127-11	CARBON	220K	5% 1/2W
R6685	1-249-421-11	CARBON	2.2K	5% 1/4W
R6686	⚠ 1-240-917-91	METAL	8.2M	5% 1W
R6688	1-249-417-11	CARBON	1K	5% 1/4W
R6689	1-249-389-11	CARBON	4.7	5% 1/4W
R6690	1-249-429-11	CARBON	10K	5% 1/4W
R6691	1-260-131-11	CARBON	470K	5% 1/2W
R6692	1-249-410-11	CARBON	270	5% 1/4W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R6693	1-215-451-00	METAL	18K	1%	1/4W
R6694	1-215-471-00	METAL	120K	1%	1/4W
R6696	1-215-925-11	METAL OXIDE	22K	5%	3W
R6697	1-249-429-11	CARBON	10K	5%	1/4W
R6698	1-249-417-11	CARBON	1K	5%	1/4W
R6704	1-249-377-11	CARBON	0.47	5%	1/4W
R6707	1-249-421-11	CARBON	2.2K	5%	1/4W
R6710	1-217-158-00	METAL	0.47	10%	5W
R6713	1-249-423-11	CARBON	3.3K	5%	1/4W
R6714	1-249-423-11	CARBON	3.3K	5%	1/4W
R6715	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6716	1-247-903-00	CARBON	1M	5%	1/4W
R6800	1-249-429-11	CARBON	10K	5%	1/4W
R6801	1-249-429-11	CARBON	10K	5%	1/4W
R6802	1-249-429-11	CARBON	10K	5%	1/4W
R6803	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6804	1-208-795-11	METAL CHIP	3.6K	0.5%	1/10W
R6805	1-215-441-00	METAL	6.8K	1%	1/4W
R6806	1-215-434-00	METAL	3.6K	1%	1/4W
R6807	1-249-383-11	CARBON	1.5	5%	1/4W
R6810	1-214-798-21	METAL	1.8	1%	1/2W
R6811	1-215-913-11	METAL OXIDE	220	5%	3W
R6812	1-247-843-11	CARBON	3.3K	5%	1/4W
R6813	1-214-798-21	METAL	1.8	1%	1/2W
R6814	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6815	1-208-801-11	METAL CHIP	6.2K	0.5%	1/10W
R6816	1-214-915-00	METAL	120K	1%	1/2W
R6818	1-215-485-00	METAL	470K	1%	1/4W
R6819	1-249-421-11	CARBON	2.2K	5%	1/4W
R6820	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6822	1-216-461-00	METAL OXIDE	5.6K	5%	2W
R6823	1-215-895-11	METAL OXIDE	3.3K	5%	2W
R6824	1-247-807-31	CARBON	100	5%	1/4W
R6825	1-247-807-31	CARBON	100	5%	1/4W
R6826	1-215-894-11	METAL OXIDE	2.2K	5%	2W
R6827	1-216-459-00	METAL OXIDE	2.7K	5%	2W
R6828	1-249-411-11	CARBON	330	5%	1/4W
R6829	1-249-411-11	CARBON	330	5%	1/4W
R6830	1-247-764-11	CARBON	10K	5%	1/2W
R6831	1-247-764-11	CARBON	10K	5%	1/2W
R6832	1-215-477-00	METAL	220K	1%	1/4W
R6833	1-215-493-00	METAL	1M	1%	1/4W
R6834	1-216-381-11	METAL OXIDE	0.22	5%	3W
R6835	1-216-381-11	METAL OXIDE	0.22	5%	3W
R6836	1-215-905-11	METAL OXIDE	10	5%	3W
R6837	1-215-905-11	METAL OXIDE	10	5%	3W
R6838	1-215-461-00	METAL	47K	1%	1/4W
R6839	1-249-405-11	CARBON	100	5%	1/4W
R6840	8-719-110-39	RD15ES-B1			
R6840	8-719-923-86	MTZJ-T-77-15			
R6841	1-216-434-11	METAL OXIDE	1.8K	5%	1W
R6842	1-215-923-00	METAL OXIDE	10K	5%	3W
R6843	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6844	1-247-807-31	CARBON	100	5%	1/4W
R6845	1-208-826-11	METAL CHIP	68K	0.5%	1/10W
R6846	1-260-127-11	CARBON	220K	5%	1/2W
R6847	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6848	1-216-101-00	RES-CHIP	150K	5%	1/10W
R6851	1-260-288-11	CARBON	0.47	5%	1/2W
R6852	1-216-345-11	METAL OXIDE	0.47	5%	1W
R6853	1-260-288-11	CARBON	0.47	5%	1/2W
R6854	1-215-923-00	METAL OXIDE	10K	5%	3W

REF NO.	PART NO.	DESCRIPTION		REMARK	
R6855	1-214-898-81	METAL	24K	1%	1/2W
R6856	1-215-923-00	METAL OXIDE	10K	5%	3W
R6857	1-215-923-00	METAL OXIDE	10K	5%	3W
R6858	1-214-898-81	METAL	24K	1%	1/2W
R6859	1-215-871-11	METAL OXIDE	2.2K	5%	1W
R6860	1-215-923-00	METAL OXIDE	10K	5%	3W
R6861	1-216-295-91	SHORT	0		
R6862	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6863	1-215-894-11	METAL OXIDE	2.2K	5%	2W
R6864	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6865	1-216-101-00	RES-CHIP	150K	5%	1/10W
R6866	1-215-431-00	METAL	2.7K	1%	1/4W
R6867	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6868	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6869	1-216-113-00	RES-CHIP	470K	5%	1/10W
R6870	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6871	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6872	1-260-125-11	CARBON	150K	5%	1/2W
R6873	1-260-125-11	CARBON	150K	5%	1/2W
R6875	1-249-417-11	CARBON	1K	5%	1/4W
R6876	1-260-288-11	CARBON	0.47	5%	1/2W
R6877	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R6878	1-208-770-11	METAL CHIP	330	0.5%	1/10W
R6879	1-216-105-91	RES-CHIP	220K	5%	1/10W
R6880	1-215-441-00	METAL	6.8K	1%	1/4W
R6881	1-215-447-00	METAL	12K	1%	1/4W
R6882	1-215-453-00	METAL	22K	1%	1/4W
R6883	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6884	1-249-441-11	CARBON	100K	5%	1/4W
R6885	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R6886	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R6887	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6888	1-216-089-91	RES-CHIP	47K	5%	1/10W
R6889	1-260-125-11	CARBON	150K	5%	1/2W
R6890	1-260-125-11	CARBON	150K	5%	1/2W
R6891	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R6892	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6893	1-216-085-91	RES-CHIP	33K	5%	1/10W
R6894	1-260-133-11	CARBON	680K	5%	1/2W
R6895	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6896	1-216-089-91	RES-CHIP	47K	5%	1/10W
R6897	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6899	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6900	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R6901	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R6902	1-249-441-11	CARBON	100K	5%	1/4W
R6903	1-215-923-00	METAL OXIDE	10K	5%	3W
R6905	1-249-389-11	CARBON	4.7	5%	1/4W
R6906	1-216-079-00	RES-CHIP	18K	5%	1/10W
R6907	1-216-079-00	RES-CHIP	18K	5%	1/10W
R6908	1-202-719-00	SOLID	1M	20%	1/2W
		<RELAY>			
RY6601	1-515-840-11	RELAY			
RY6603	1-755-357-11	RELAY, AC POWER			
		<TRANSFORMER>			
T6601	⚠ 1-431-732-11	TRANSFORMER, CONVERTER (SRT)			
T6602	⚠ 1-435-081-11	TRANSFORMER, CONVERTER (PIT)			

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION	REMARK
T6800	1-429-741-11	TRANSFORMER, DRIVE	
T6801	1-433-934-11	TRANSFORMER, FERRITE (DFT)	
T6802	1-433-489-11	TRANSFORMER, FERRITE (HDT)	
T6803	⚠ 1-453-332-21	TRANSFORMER ASSY FLY BACK (NX-4601//J1B4) (KV-ES38M31)	
T6803	⚠ 1-453-360-11	TRANSFORMER ASSY FLY BACK (NX-4601//J1J4)(EXCEPT KV-ES38M31)	
T6804	1-433-489-11	TRANSFORMER, FERRITE (HDT)	
		<THERMISTOR>	
TH6601	1-803-540-11	THERMISTOR	
TH6603	1-803-586-11	THERMISTOR, NTC	
		<VARISTOR>	
VD6601	1-803-614-11	VARISTOR	
VD6603	1-803-830-11	VARISTOR (ERZV14D621)	
**********			
*	A-1333-171-A	D1 BOARD MOUNTED **********	
	4-382-854-11	SCREW (M3X10), P, SW (+)	
		<CAPACITOR>	
C6101	1-107-714-11	ELECT 10UF 20.00% 50V	
C6102	1-109-953-11	ELECT 2.2UF 20.00% 50V	
C6103	1-107-714-11	ELECT 10UF 20.00% 50V	
C6104	1-126-947-11	ELECT 47UF 20.00% 16V	
C6105	1-126-933-11	ELECT 100UF 20.00% 16V	
C6108	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6109	1-126-947-11	ELECT 47UF 20.00% 25V	
C6111	1-126-933-11	ELECT 100UF 20.00% 16V	
C6112	1-163-037-11	CERAMIC CHIP 0.022UF 10.00% 50V	
C6113	1-137-493-11	FILM 0.0047UF 5.00% 630V	
C6114	1-107-909-11	ELECT 47UF 20.00% 16V	
C6115	1-163-005-91	CERAMIC CHIP 470PF 10.00% 50V	
C6116	1-163-275-11	CERAMIC CHIP 0.001UF 5.00% 50V	
C6117	1-163-275-11	CERAMIC CHIP 0.001UF 5.00% 50V	
C6118	1-107-909-11	ELECT 47UF 20.00% 16V	
C6121	1-126-963-11	ELECT 4.7UF 20.00% 50V	
C6122	1-126-947-11	ELECT 47UF 20.00% 16V	
C6123	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6124	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6125	1-128-551-11	ELECT 22UF 20.00% 25V	
C6127	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6128	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6129	1-126-964-11	ELECT 10UF 20.00% 50V	
C6131	1-126-964-11	ELECT 10UF 20.00% 50V	
C6133	1-137-194-81	FILM 0.47UF 5.00% 50V	
C6136	1-129-716-00	FILM 0.015UF 5.00% 630V	
C6138	1-126-968-11	ELECT 100UF 20.00% 50V	
C6139	1-107-902-11	ELECT 1UF 20.00% 50V	
C6140	1-126-960-11	ELECT 1UF 20.00% 50V	
C6201	1-126-947-11	ELECT 47UF 20.00% 25V	
C6202	1-126-947-11	ELECT 47UF 20.00% 16V	
C6203	1-126-947-11	ELECT 47UF 20.00% 16V	

REF NO.	PART NO.	DESCRIPTION	REMARK
C6204	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6205	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C6206	1-126-964-11	ELECT 10UF 20.00% 50V	
C6207	1-126-947-11	ELECT 47UF 20.00% 16V	
C6208	1-126-947-11	ELECT 47UF 20.00% 25V	
C6209	1-163-133-00	CERAMIC CHIP 470PF 5.00% 50V	
C6210	1-163-009-91	CERAMIC CHIP 0.001UF 10.00% 50V	
C6211	1-126-964-11	ELECT 10UF 20.00% 50V	
C6212	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6219	1-163-017-00	CERAMIC CHIP 0.0047UF 10.00% 50V	
C6220	1-163-017-00	CERAMIC CHIP 0.0047UF 10.00% 50V	
C6350	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6351	1-126-947-11	ELECT 47UF 20.00% 16V	
C6353	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C6355	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C6356	1-163-809-11	CERAMIC CHIP 0.047UF 10.00% 25V	
C6358	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6361	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6362	1-164-182-11	CERAMIC CHIP 0.0033UF 10.00% 50V	
C6365	1-163-809-11	CERAMIC CHIP 0.047UF 10.00% 25V	
C6376	1-126-947-11	ELECT 47UF 20.00% 16V	
C6377	1-126-947-11	ELECT 47UF 20.00% 16V	
C6378	1-164-004-11	CERAMIC CHIP 0.1UF 10.00% 25V	
C6380	1-136-495-11	FILM 0.068UF 5.00% 50V	
C6381	1-126-964-11	ELECT 10UF 20.00% 50V	
C6385	1-126-947-11	ELECT 47UF 20.00% 16V	
C6386	1-126-947-11	ELECT 47UF 20.00% 16V	
C6388	1-126-964-11	ELECT 10UF 20.00% 50V	
C6392	1-126-947-11	ELECT 47UF 20.00% 16V	
C6409	1-126-963-11	ELECT 4.7UF 20.00% 50V	
		<CONNECTOR>	
CN6100	1-793-498-11	CONNECTOR, BOARD TO BOARD 50P	
CN6101 *	1-564-525-11	PLUG, CONNECTOR 10P	
CN6103 *	1-564-518-11	PLUG, CONNECTOR 3P	
CN6104 *	1-564-523-11	PLUG, CONNECTOR 8P	
		<DIODE>	
D6101	8-719-510-02	D1NS4	
D6102	8-719-510-02	D1NS4	
D6103	8-719-063-73	DIODE D1NL20U-TR	
D6104	8-719-911-19	1SS119-25	
D6105	8-719-109-60	RD2.7ESB2	
D6106	8-719-510-02	D1NS4	
D6107	8-719-911-19	1SS119-25	
D6108	8-719-911-19	1SS119-25	
D6110	8-719-987-87	ERA85-009	
D6112	8-719-911-19	1SS119-25	
D6133	8-719-911-19	1SS119-25	
D6134	8-719-911-19	1SS119-25	
D6135	8-719-911-19	1SS119-25	
D6201	8-719-109-88	RD5.6ES-B1	
D6210	8-719-109-88	RD5.6ES-B1	
D6350	8-719-914-43	DAN202K	
D6351	8-719-914-43	DAN202K	
D6355	8-719-914-43	DAN202K	
D6404	8-719-914-43	DAN202K	

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REF NO.	PART NO.	DESCRIPTION		REMARK
		<IC>		
IC6101	8-752-053-21	CXA1211M		
IC6102	8-759-450-95	LM393N		
IC6103	8-759-450-95	LM393N		
IC6104	8-759-803-42	LA6500-FA		
IC6105	8-759-450-95	LM393N		
IC6106	8-759-682-42	MM1431ATT		
IC6108	8-759-567-08	MB88141APF-ER		
IC6201	8-759-183-37	CA0007AD		
IC6202	8-759-135-80	UPC358C		
IC6351	8-759-450-95	LM393N		
IC6353	8-759-231-53	TA7805S		
IC6354	8-759-325-48	CA0005AD		
IC6356	8-759-822-38	LA6510		
		<CHIP CONDUCTOR>		
JR6101	1-216-296-11	SHORT	0	
JR6102	1-216-296-11	SHORT	0	
JR6103	1-216-296-11	SHORT	0	
JR6104	1-216-295-91	SHORT	0	
JR6108	1-216-296-11	SHORT	0	
JR6109	1-216-296-11	SHORT	0	
JR6110	1-216-296-11	SHORT	0	
JR6111	1-216-296-11	SHORT	0	
JR6112	1-216-296-11	SHORT	0	
JR6113	1-216-296-11	SHORT	0	
JR6114	1-216-296-11	SHORT	0	
JR6115	1-216-296-11	SHORT	0	
JR6116	1-216-295-91	SHORT	0	
JR6117	1-216-295-91	SHORT	0	
		<COIL>		
L6101	1-416-920-11	INDUCTOR	10MH	
L6102	1-406-989-21	INDUCTOR	10MH	
		<IC LINK>		
PS6101	1-533-589-31	LINK, IC		
		<TRANSISTOR>		
Q6103	8-729-046-33	IRF720-LF49		
Q6104	8-729-230-49	2SC2712-YG		
Q6105	8-729-230-49	2SC2712-YG		
Q6106	8-729-026-49	2SA1037AK-T146-R		
Q6107	8-729-140-93	2SB733-34		
Q6109	8-729-026-49	2SA1037AK-T146-R		
Q6110	1-801-806-11	TR DTC144EKA		
Q6118	8-729-230-49	2SC2712-YG		
Q6124	1-801-806-11	TR DTC144EKA		
Q6125	8-729-230-49	2SC2712-YG		
Q6126	8-729-026-49	2SA1037AK-T146-R		
Q6128	8-729-023-22	2SD2114K		
Q6201	8-729-230-49	2SC2712-YG		
Q6202	8-729-230-49	2SC2712-YG		
Q6203	8-729-422-33	2SD601A-Q-TX		
Q6350	8-729-230-49	2SC2712-YG		
Q6356	8-729-230-49	2SC2712-YG		
Q6405	8-729-026-49	2SA1037AK-T146-R		
Q6455	8-729-230-49	2SC2712-YG		

REF NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R6101	1-216-025-11	RES-CHIP	100	5%	1/10W
R6103	1-216-025-11	RES-CHIP	100	5%	1/10W
R6105	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R6106	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R6107	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6108	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6109	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6110	1-216-295-91	SHORT	0		
R6113	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6114	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6115	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R6116	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6117	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R6118	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R6119	1-208-796-11	METAL CHIP	3.9K	0.5%	1/10W
R6120	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6121	1-216-490-11	METAL OXIDE	39K	5%	3W
R6122	1-216-295-91	SHORT	0		
R6123	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R6124	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R6126	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R6127	1-208-832-11	METAL CHIP	120K	0.5%	1/10W
R6128	1-208-838-91	METAL CHIP	220K	0.5%	1/10W
R6129	1-216-353-00	METAL OXIDE	2.2	5%	1W
R6130	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6131	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R6133	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R6134	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6135	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6136	1-260-328-11	CARBON	1K	5%	1/2W
R6137	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6138	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R6139	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R6140	1-216-077-91	RES-CHIP	15K	5%	1/10W
R6141	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R6142	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6143	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R6146	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6149	1-208-828-11	METAL CHIP	82K	0.5%	1/10W
R6150	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6151	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6152	1-216-081-00	RES-CHIP	22K	5%	1/10W
R6153	1-216-105-91	RES-CHIP	220K	5%	1/10W
R6154	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R6155	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R6156	1-216-077-91	RES-CHIP	15K	5%	1/10W
R6157	1-216-089-91	RES-CHIP	47K	5%	1/10W
R6158	1-216-689-11	RES-CHIP	39K	5%	1/10W
R6159	1-208-797-11	METAL CHIP	4.3K	0.5%	1/10W
R6160	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6161	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R6162	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6168	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6169	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R6170	1-216-037-00	RES-CHIP	330	5%	1/10W
R6171	1-216-113-00	RES-CHIP	470K	5%	1/10W
R6172	1-216-105-91	RES-CHIP	220K	5%	1/10W
R6173	1-216-093-91	RES-CHIP	68K	5%	1/10W
R6174	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R6175	1-208-816-11	METAL CHIP	27K	0.5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R6176	1-249-389-11	CARBON	4.7	5%	1/4W
R6177	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6178	1-249-389-11	CARBON	4.7	5%	1/4W
R6180	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6190	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6192	1-216-295-91	SHORT	0		
R6195	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R6196	1-249-377-11	CARBON	0.47	5%	1/4W
R6197	1-216-099-00	RES-CHIP	120K	5%	1/10W
R6198	1-216-093-91	RES-CHIP	68K	5%	1/10W
R6200	1-208-826-11	METAL CHIP	68K	0.5%	1/10W
R6201	1-247-750-11	CARBON	680	5%	1/2W
R6202	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R6203	1-215-906-11	METAL OXIDE	15	5%	3W
R6204	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6206	1-216-033-00	RES-CHIP	220	5%	1/10W
R6207	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R6208	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6209	1-216-107-00	RES-CHIP	270K	5%	1/10W
R6210	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6211	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6212	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6213	1-216-105-91	RES-CHIP	220K	5%	1/10W
R6215	1-208-836-11	METAL CHIP	180K	0.5%	1/10W
R6216	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6217	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6218	1-208-836-11	METAL CHIP	180K	0.5%	1/10W
R6219	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R6220	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6221	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6222	1-216-295-91	SHORT	0		
R6223	1-216-295-91	SHORT	0		
R6224	1-208-824-11	METAL CHIP	56K	0.5%	1/10W
R6225	1-208-824-11	METAL CHIP	56K	0.5%	1/10W
R6226	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R6227	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R6324	1-216-017-91	RES-CHIP	47	5%	1/10W
R6325	1-216-017-91	RES-CHIP	47	5%	1/10W
R6326	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R6327	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R6350	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R6357	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6359	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6360	1-216-073-91	RES-CHIP	10K	5%	1/10W
R6361	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6367	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R6368	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R6375	1-216-041-00	RES-CHIP	470	5%	1/10W
R6378	1-215-473-00	METAL	150K	1%	1/4W
R6379	1-216-295-91	SHORT	0		
R6382	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R6385	1-216-295-91	SHORT	0		
R6386	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R6391	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6394	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R6413	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R6416	1-208-808-11	METAL CHIP	12K	0.5%	1/10W
R6418	1-216-113-00	RES-CHIP	470K	5%	1/10W
R6419	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6420	1-216-111-00	RES-CHIP	390K	5%	1/10W
R6433	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6438	1-215-437-00	METAL	4.7K	1%	1/4W
R6442	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R6456	1-216-097-11	RES-CHIP	100K	5%	1/10W
R6457	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R6458	1-216-089-91	RES-CHIP	47K	5%	1/10W
R6459	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
		<VARIABLE RESISTOR>			
RV6100	1-241-785-11	RES, ADJ, CERMET 10K			
**********					
	* A-1333-176-A	DH BOARD MOUNTED (KV-ES38M31)			
	* A-1333-175-A	DH BOARD MOUNTED (KV-ES38M61)			
	* A-1333-172-A	DH BOARD MOUNTED (KV-ES38M90/ES38M91)			
		**********			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C3801	1-126-964-11	ELECT	10UF	20.00%	50V
C3804	1-102-129-00	CERAMIC	0.01UF	10.00%	50V
C3805	1-126-964-11	ELECT	10UF	20.00%	50V
C3807	1-102-129-00	CERAMIC	0.01UF	10.00%	50V
C3816	1-126-964-11	ELECT	10UF	20.00%	50V
C3819	1-126-960-11	ELECT	1UF	20.00%	50V
C3822	1-136-165-00	FILM	0.1UF	5.00%	50V
		<CONNECTOR>			
CN3802	* 1-564-509-11	PLUG, CONNECTOR 6P			
		<DIODE>			
D3805	8-719-911-19	1SS119-25			
		<IC>			
IC3805	8-759-822-38	LA6510			
IC3807	1-418-597-11	SENSOR UNIT, MAGNETIC			
		<TRANSISTOR>			
Q3806	8-729-119-78	2SC2785-HFE			
Q3807	8-729-030-02	DTC144ESA			
Q3808	8-729-030-02	DTC144ESA			
Q3809	8-729-119-78	2SC2785-HFE			
Q3812	8-729-119-78	2SC2785-HFE			
		<RESISTOR>			
R3802	1-249-417-11	CARBON	1K	5%	1/4W
R3803	1-249-417-11	CARBON	1K	5%	1/4W
R3804	1-215-428-00	METAL	2K	1%	1/4W
R3805	1-215-428-00	METAL (KV-ES38M31)	2K	1%	1/4W
R3805	1-215-425-00	METAL (KV-ES38M61)	1.5K	1%	1/4W

DH E

REF NO.	PART NO.	DESCRIPTION		REMARK	
R3805	1-215-423-00	METAL (KV-ES38M90/ES38M91)	1.2K	1%	1/4W
R3808	1-247-883-00	CARBON	150K	5%	1/4W
R3809	1-215-461-00	METAL	47K	1%	1/4W
R3810	1-249-425-11	CARBON	4.7K	5%	1/4W
R3814	1-249-411-11	CARBON	330	5%	1/4W
R3823	1-249-395-11	CARBON	15	5%	1/4W
R3825	1-249-417-11	CARBON	1K	5%	1/4W
R3828	1-249-377-11	CARBON	0.47	5%	1/4W
R3839	1-249-429-11	CARBON	10K	5%	1/4W
R3845	1-249-425-11	CARBON	4.7K	5%	1/4W
R3849	1-249-377-11	CARBON	0.47	5%	1/4W
R3852	1-249-441-11	CARBON	100K	5%	1/4W
R3854	1-249-429-11	CARBON	10K	5%	1/4W
R3858	1-215-452-00	METAL (KV-ES38M31 ONLY)	20K	1%	1/4W
R3858	1-215-451-00	METAL (EXCEPT KV-ES38M31)	18K	1%	1/4W
R3859	1-215-421-00	METAL (KV-ES38M31)	1K	1%	1/4W
R3859	1-215-425-00	METAL (KV-ES38M61)	1.5K	1%	1/4W
R3859	1-215-430-00	METAL (KV-ES38M90/ES38M91)	2.4K	1%	1/4W
R3860	1-215-405-00	METAL	220	1%	1/4W
R3861	1-215-461-00	METAL	47K	1%	1/4W
R3862	1-249-429-11	CARBON	10K	5%	1/4W

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* A-1333-173-A E BOARD MOUNTED
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<CAPACITOR>

C4301	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4302	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C4308	1-126-960-11	ELECT	1UF	20.00%	50V
C4309	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C4316	1-126-947-11	ELECT	47UF	20.00%	16V
C4317	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4318	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4319	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4320	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4321	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4322	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4324	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4325	1-163-093-00	CERAMIC CHIP	10PF	5.00%	50V
C4326	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4327	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4328	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4329	1-126-963-11	ELECT	4.7UF	20.00%	50V
C4330	1-136-244-11	FILM	0.1UF	5.00%	50V
C4331	1-126-959-11	ELECT	0.47UF	20.00%	50V
C4332	1-136-161-00	FILM	0.047UF	5.00%	50V
C4333	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4334	1-126-947-11	ELECT	47UF	20.00%	16V
C4336	1-126-947-11	ELECT	47UF	20.00%	16V
C4338	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4339	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C4340	1-126-947-11	ELECT	47UF	20.00%	16V
C4341	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C4342	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4343	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4344	1-163-809-11	CERAMIC CHIP	0.047UF	10.00%	25V
C4345	1-126-947-11	ELECT	47UF	20.00%	16V
C4346	1-164-346-11	CERAMIC CHIP	1UF		16V
C4347	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4348	1-164-346-11	CERAMIC CHIP	1UF		16V
C4349	1-164-346-11	CERAMIC CHIP	1UF		16V
C4350	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4351	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C4352	1-126-947-11	ELECT	47UF	20.00%	16V
C4353	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C4354	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C4355	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4356	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4357	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4358	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4359	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C4360	1-126-963-11	ELECT	4.7UF	20.00%	50V
C4362	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4363	1-126-947-11	ELECT	47UF	20.00%	16V
C4364	1-126-947-11	ELECT	47UF	20.00%	16V
C4366	1-104-760-11	CERAMIC CHIP	0.047UF	10.00%	50V
C4367	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4369	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4370	1-126-947-11	ELECT	47UF	20.00%	16V
C4371	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4378	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C4800	1-136-165-00	FILM	0.1UF	5.00%	50V
C4801	1-136-161-00	FILM	0.047UF	5.00%	50V
C4802	1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C4803	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4804	1-126-947-11	ELECT	47UF	20.00%	16V
C4805	1-126-964-11	ELECT	10UF	20.00%	50V
C4806	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C4807	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C4808	1-136-165-00	FILM	0.1UF	5.00%	50V
C4809	1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C4810	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C4811	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4812	1-126-947-11	ELECT	47UF	20.00%	16V
C4813	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4814	1-126-947-11	ELECT	47UF	20.00%	16V
C4817	1-126-947-11	ELECT	47UF	20.00%	16V
C4820	1-107-909-11	ELECT	47UF	20.00%	16V
C4823	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C4824	1-163-809-11	CERAMIC CHIP	0.047UF	10.00%	25V
C4825	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4833	1-126-964-11	ELECT	10UF	20.00%	50V
C4834	1-126-933-11	ELECT	100UF	20.00%	16V
C4835	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4836	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4837	1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C4838	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4905	1-126-964-11	ELECT	10UF	20.00%	50V
C4906	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V

E

REF NO.	PART NO.	DESCRIPTION			REMARK
		<CONNECTOR>			
CN4101	1-793-497-11	CONNECTOR, BOARD TO BOARD 40P			
CN4500 *	1-564-512-11	PLUG, CONNECTOR 9P			
CN4502 *	1-564-506-11	PLUG, CONNECTOR 3P			
		<DIODE>			
D4302	8-719-110-41	RD15ES-B2			
D4303	8-719-109-72	RD3.9ES-B2			
D4304	8-719-977-22	DTZ9.1			
D4305	8-719-977-22	DTZ9.1			
D4311	8-719-914-43	DAN202K			
D4312	8-719-914-43	DAN202K			
D4313	8-719-401-63	MA3062M-TX			
D4314	8-719-914-43	DAN202K			
D4800	8-719-914-43	DAN202K			
D4801	8-719-914-43	DAN202K			
D4802	8-719-109-81	RD4.7ESB2			
D4805	8-719-914-43	DAN202K			
D4808	8-719-914-43	DAN202K			
D4809	8-719-914-43	DAN202K			
D4811	1-249-381-11	CARBON	1	5%	1/4W
D4812	8-719-911-19	1SS119-25			
D4813	8-719-914-43	DAN202K			
D4814	8-719-914-43	DAN202K			
D4815	8-719-109-54	RD2.2ES-B2			
D4816	8-719-911-19	1SS119-25			
D4816	8-719-991-33	1SS133T-77			
D4817	8-719-109-89	RD5.6ESB2			
D4818	8-719-914-43	DAN202K			
D4900	8-719-911-19	1SS119-25			
		<FERRITE BEAD>			
FB4387	1-216-295-91	SHORT	0		
FB4388	1-216-295-91	SHORT	0		
FB4389	1-216-295-91	SHORT	0		
		<IC>			
IC4301	8-752-090-87	CXA2100AQ			
IC4800	8-759-450-95	LM393N			
IC4801	8-759-450-95	LM393N			
IC4802	8-759-638-79	NJM3404AD-W			
IC4803	8-759-135-80	UPC358C			
		<CHIP CONDUCTOR>			
JR4301	1-216-295-91	SHORT	0		
		<COIL>			
L4301	1-412-029-11	INDUCTOR	10UH		
L4302	1-412-029-11	INDUCTOR	10UH		
L4303	1-412-029-11	INDUCTOR	10UH		
L4304	1-412-029-11	INDUCTOR	10UH		
L4305	1-412-029-11	INDUCTOR	10UH		
L4306	1-412-029-11	INDUCTOR	10UH		
L4308	1-412-031-11	INDUCTOR	47UH		
L4309	1-412-031-11	INDUCTOR	47UH		
L4311	1-412-002-31	INDUCTOR	4.7UH		

REF NO.	PART NO.	DESCRIPTION			REMARK
		<TRANSISTOR>			
Q4301	8-729-230-49	2SC2712-YG			
Q4302	8-729-424-02	2SB709A-QRS-TX			
Q4303	8-729-120-28	2SC1623-L5L6			
Q4304	8-729-230-49	2SC2712-YG			
Q4305	8-729-230-49	2SC2712-YG			
Q4307	8-729-424-02	2SB709A-QRS-TX			
Q4308	8-729-424-02	2SB709A-QRS-TX			
Q4310	8-729-424-02	2SB709A-QRS-TX			
Q4315	1-801-806-11	TR DTC144EKA			
Q4316	8-729-230-49	2SC2712-YG			
Q4317	8-729-900-53	DTC114EK			
Q4319	8-729-424-02	2SB709A-QRS-TX			
Q4320	8-729-424-02	2SB709A-QRS-TX			
Q4321	8-729-424-02	2SB709A-QRS-TX			
Q4322	8-729-424-02	2SB709A-QRS-TX			
Q4800	8-729-230-49	2SC2712-YG			
Q4801	8-729-230-49	2SC2712-YG			
Q4802	8-729-230-49	2SC2712-YG			
Q4803	8-729-230-49	2SC2712-YG			
Q4804	8-729-230-49	2SC2712-YG			
Q4805	8-729-230-49	2SC2712-YG			
Q4806	8-729-230-49	2SC2712-YG			
Q4807	8-729-230-49	2SC2712-YG			
Q4808	8-729-424-02	2SB709A-QRS-TX			
Q4809	8-729-424-02	2SB709A-QRS-TX			
Q4810	8-729-230-49	2SC2712-YG			
Q4811	8-729-230-49	2SC2712-YG			
Q4812	8-729-424-02	2SB709A-QRS-TX			
Q4813	8-729-424-02	2SB709A-QRS-TX			
Q4814	8-729-424-02	2SB709A-QRS-TX			
Q4815	8-729-424-02	2SB709A-QRS-TX			
Q4816	8-729-424-02	2SB709A-QRS-TX			
Q4817	8-729-230-49	2SC2712-YG			
Q4818	8-729-424-02	2SB709A-QRS-TX			
Q4820	8-729-230-49	2SC2712-YG			
Q4821	1-801-806-11	TR DTC144EKA			
Q4822	8-729-230-49	2SC2712-YG			
Q4823	8-729-424-02	2SB709A-QRS-TX			
Q4824	8-729-424-02	2SB709A-QRS-TX			
Q4825	8-729-230-49	2SC2712-YG			
Q4826	8-729-230-49	2SC2712-YG			
Q4906	8-729-422-33	2SD601A-Q-TX			
Q4907	8-729-424-02	2SB709A-QRS-TX			
Q4908	8-729-424-02	2SB709A-QRS-TX			
Q4909	8-729-422-33	2SD601A-Q-TX			
Q4910	8-729-424-02	2SB709A-QRS-TX			
		<RESISTOR>			
R4301	1-216-025-11	RES-CHIP	100	5%	1/10W
R4302	1-216-025-11	RES-CHIP	100	5%	1/10W
R4303	1-216-025-11	RES-CHIP	100	5%	1/10W
R4304	1-216-025-11	RES-CHIP	100	5%	1/10W
R4305	1-216-025-11	RES-CHIP	100	5%	1/10W
R4306	1-216-025-11	RES-CHIP	100	5%	1/10W
R4307	1-216-025-11	RES-CHIP	100	5%	1/10W
R4308	1-216-295-91	SHORT	0		
R4310	1-216-295-91	SHORT	0		
R4312	1-216-295-91	SHORT	0		

E

REF NO.	PART NO.	DESCRIPTION		REMARK	
R4313	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R4314	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4316	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R4317	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4318	1-208-804-11	METAL CHIP	8.2K	0.5%	1/10W
R4319	1-208-804-11	METAL CHIP	8.2K	0.5%	1/10W
R4320	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R4321	1-216-298-00	RES-CHIP	2.2	5%	1/10W
R4322	1-216-097-11	RES-CHIP	100K	5%	1/10W
R4323	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R4324	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R4325	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R4326	1-208-826-11	METAL CHIP	68K	0.5%	1/10W
R4327	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R4329	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R4330	1-216-089-91	RES-CHIP	47K	5%	1/10W
R4331	1-216-025-11	RES-CHIP	100	5%	1/10W
R4332	1-216-025-11	RES-CHIP	100	5%	1/10W
R4333	1-216-025-11	RES-CHIP	100	5%	1/10W
R4334	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4335	1-216-025-11	RES-CHIP	100	5%	1/10W
R4336	1-216-025-11	RES-CHIP	100	5%	1/10W
R4337	1-216-025-11	RES-CHIP	100	5%	1/10W
R4338	1-216-041-00	RES-CHIP	470	5%	1/10W
R4339	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R4341	1-216-295-91	SHORT	0		
R4343	1-216-025-11	RES-CHIP	100	5%	1/10W
R4344	1-216-025-11	RES-CHIP	100	5%	1/10W
R4345	1-216-075-00	RES-CHIP	12K	5%	1/10W
R4346	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R4347	1-216-025-11	RES-CHIP	100	5%	1/10W
R4348	1-216-025-11	RES-CHIP	100	5%	1/10W
R4349	1-216-041-00	RES-CHIP	470	5%	1/10W
R4350	1-216-025-11	RES-CHIP	100	5%	1/10W
R4351	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4352	1-216-041-00	RES-CHIP	470	5%	1/10W
R4353	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R4354	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R4355	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4356	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4357	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4358	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R4359	1-216-041-00	RES-CHIP	470	5%	1/10W
R4360	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4361	1-216-133-91	RES-CHIP	3.3M	5%	1/10W
R4362	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4363	1-216-025-11	RES-CHIP	100	5%	1/10W
R4365	1-216-025-11	RES-CHIP	100	5%	1/10W
R4366	1-216-025-11	RES-CHIP	100	5%	1/10W
R4367	1-216-025-11	RES-CHIP	100	5%	1/10W
R4368	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4369	1-216-025-11	RES-CHIP	100	5%	1/10W
R4370	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4372	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4373	1-216-295-91	SHORT	0		
R4374	1-216-025-11	RES-CHIP	100	5%	1/10W
R4375	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4376	1-216-025-11	RES-CHIP	100	5%	1/10W
R4377	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4380	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4381	1-208-854-11	METAL CHIP	1M	0.5%	1/10W
R4382	1-216-073-91	RES-CHIP	10K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION		REMARK	
R4383	1-216-079-00	RES-CHIP	18K	5%	1/10W
R4384	1-216-025-11	RES-CHIP	100	5%	1/10W
R4387	1-216-295-91	SHORT	0		
R4388	1-216-295-91	SHORT	0		
R4389	1-216-295-91	SHORT	0		
R4395	1-216-295-91	SHORT	0		
R4396	1-216-295-91	SHORT	0		
R4397	1-216-295-91	SHORT	0		
R4399	1-216-025-11	RES-CHIP	100	5%	1/10W
R4401	1-216-105-91	RES-CHIP	220K	5%	1/10W
R4408	1-216-025-11	RES-CHIP	100	5%	1/10W
R4409	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4410	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4411	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4412	1-216-097-11	RES-CHIP	100K	5%	1/10W
R4518	1-216-025-11	RES-CHIP	100	5%	1/10W
R4519	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4520	1-216-025-11	RES-CHIP	100	5%	1/10W
R4521	1-216-025-11	RES-CHIP	100	5%	1/10W
R4800	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4801	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4802	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4803	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4804	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R4805	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R4806	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R4807	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4809	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4810	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R4811	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R4812	1-216-295-91	SHORT	0		
R4813	1-216-089-91	RES-CHIP	47K	5%	1/10W
R4814	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R4815	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R4816	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4817 *	1-208-852-11	METAL CHIP	820K	0.5%	1/10W
R4818	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4819	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4820	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4821	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4822	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4823	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4824	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4825	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4826	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4827	1-216-295-91	SHORT	0		
R4828	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R4829	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R4831	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R4832	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R4833	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R4834	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R4835	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R4836	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R4837	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R4838	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R4839	1-208-802-11	METAL CHIP	6.8K	0.5%	1/10W
R4840	1-216-295-91	SHORT	0		
R4841	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4842	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R4843	1-216-057-00	RES-CHIP	2.2K	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

E **F1** **F2**

REF NO.	PART NO.	DESCRIPTION		REMARK	
R4844	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R4845	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R4846	1-216-295-91	SHORT	0		
R4856	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4857	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R4858	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R4859	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R4860	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R4861	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4862	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R4864	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R4865	1-208-770-11	METAL CHIP	330	0.5%	1/10W
R4866	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4869	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R4871	1-208-828-11	METAL CHIP	82K	0.5%	1/10W
R4872	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4874	1-216-295-91	SHORT	0		
R4875	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4877	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4878	1-208-838-91	METAL CHIP	220K	0.5%	1/10W
R4879	1-216-105-91	RES-CHIP	220K	5%	1/10W
R4881	1-216-295-91	SHORT	0		
R4882	1-208-836-11	METAL CHIP	180K	0.5%	1/10W
R4883	1-208-842-11	METAL CHIP	330K	0.5%	1/10W
R4884	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R4887	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R4889	1-216-025-11	RES-CHIP	100	5%	1/10W
R4891	1-216-025-11	RES-CHIP	100	5%	1/10W
R4892	1-216-295-91	SHORT	0		
R4894	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4895	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4897	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R4898	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R4899	1-216-025-11	RES-CHIP	100	5%	1/10W
R4908	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4909	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R4910	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R4911	1-208-818-11	METAL CHIP	33K	0.5%	1/10W
R4912	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R4913	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R4914	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4915	1-216-025-11	RES-CHIP	100	5%	1/10W
R4916	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4917	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4918	1-216-089-91	RES-CHIP	47K	5%	1/10W
R4921	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R4922	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R4924	1-208-820-11	METAL CHIP	39K	0.5%	1/10W
R4925	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4926	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4927	1-208-836-11	METAL CHIP	180K	0.5%	1/10W
R4989	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R4991	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
		<CRYSTAL>			
X4300	1-767-127-11	VIBRATOR, CERAMIC			

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REF NO.		PART NO.	DESCRIPTION			
	*	A-1241-509-A	F1 BOARD MOUNTED			
			**********			
		1-533-223-11	HOLDER, FUSE			
	*	4-374-846-01	COVER, CAPACITOR, CAP TYPE			
			<CAPACITOR>			
C1601	⚠	1-104-708-51	MYLAR	0.47UF	20.00%	250V
C1602	⚠	1-109-835-51	MYLAR	0.68UF	20.00%	250V
C1603	⚠	1-117-703-51	CERAMIC	0.0047UF	99%	250V
			<CONNECTOR>			
CN1601	⚠	1-580-843-11	PIN, CONNECTOR (POWER)			
CN1602	⚠	1-580-843-11	PIN, CONNECTOR (POWER)			
CN1604		1-695-915-11	TAB (CONTACT)			
			<FUSE>			
F1601		1-532-299-00	FUSE, TIME-LAG 5A/250V			
			<FERRITE BEAD>			
FB1601		1-410-397-21	FERRITE	1.1UH		
FB1602		1-410-397-21	FERRITE	1.1UH		
FB1603		1-410-397-21	FERRITE	1.1UH		
FB1604		1-410-397-21	FERRITE	1.1UH		
			<RESISTOR>			
R1601	⚠	1-202-885-91	SOLID	1M	10%	1/2W
			<TRANSFORMER>			
T1601		1-433-900-11	TRANSFORMER, LINE FILTER			
T1602		1-433-900-11	TRANSFORMER, LINE FILTER			
			<VARISTOR>			
VDR161		1-803-830-11	VARISTOR (ERZV14D621)			

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	*	A-1241-510-A	F2 BOARD MOUNTED			
			**********			
			<CONNECTOR>			
CN1651		1-580-843-11	PIN, CONNECTOR (POWER)			
CN1652	*	1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P			
			<SWITCH>			
S1651	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)			

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H3 H2 H1

REF NO.	PART NO.	DESCRIPTION			REMARK
	* A-1377-035-A	H1 BOARD MOUNTED **********			
	* 4-055-304-01	HOLDER, LED			
		<CAPACITOR>			
C1910	1-126-947-11	ELECT	47UF	20.00%	16V
C1911	1-126-947-11	ELECT	47UF	20.00%	16V
C1912	1-102-824-00	CERAMIC	470PF	5.00%	50V
		<CONNECTOR>			
CN1901	* 1-564-520-11	PLUG, CONNECTOR 5P			
		<DIODE>			
D1906	8-719-045-19	SPB-26MVWF			
		<IC>			
IC1901	8-742-134-01	SBX1981-51RP			
		<TRANSISTOR>			
Q1901	8-729-030-02	DTC144ESA			
Q1902	8-729-030-02	DTC144ESA			
		<RESISTOR>			
R1911	1-249-411-11	CARBON	330	5%	1/4W
R1913	1-249-429-11	CARBON	10K	5%	1/4W
R1914	1-249-411-11	CARBON	330	5%	1/4W
R1915	1-249-429-11	CARBON	10K	5%	1/4W
R1916	1-249-401-11	CARBON	47	5%	1/4W
R1917	1-247-807-31	CARBON	100	5%	1/4W
R1920	1-247-807-31	CARBON	100	5%	1/4W
R1921	1-247-807-31	CARBON	100	5%	1/4W

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	* A-1377-036-A	H2 BOARD MOUNTED **********			
		<CAPACITOR>			
C1930	1-136-153-00	FILM	0.01UF	5.00%	50V
C1932	1-136-153-00	FILM	0.01UF	5.00%	50V
C1935	1-102-824-00	CERAMIC	470PF	5.00%	50V
C1938	1-102-824-00	CERAMIC	470PF	5.00%	50V
		<CONNECTOR>			
CN1932	* 1-564-509-11	PLUG, CONNECTOR 6P			
CN1934	* 1-564-515-11	PLUG, CONNECTOR 12P			

REF NO.	PART NO.	DESCRIPTION			REMARK
		<DIODE>			
D1930	8-719-929-15	HZS9.1NB2			
D1930	8-719-923-60	MTZJ-T-77-9.1A			
D1935	8-719-929-15	HZS9.1NB2			
		<JACK>			
J1931	1-770-786-11	JACK			
J1932	1-537-744-11	TERMINAL, S			
J1933	1-770-329-11	JACK, PIN 3P			
		<COIL>			
L1931	1-408-603-31	INDUCTOR	10UH		
L1932	1-408-603-31	INDUCTOR	10UH		
		<RESISTOR>			
R1933	1-247-895-91	CARBON	470K	5%	1/4W
R1934	1-247-807-31	CARBON	100	5%	1/4W
R1935	1-247-807-31	CARBON	100	5%	1/4W
R1936	1-247-895-91	CARBON	470K	5%	1/4W
R1952	1-249-421-11	CARBON	2.2K	5%	1/4W
		<SWITCH>			
S1931	1-692-431-21	SWITCH, TACTILE			

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	* A-1377-037-A	H3 BOARD MOUNTED **********			
		<CONNECTOR>			
CN1980	* 1-564-518-11	PLUG, CONNECTOR 3P			
		<RESISTOR>			
R1970	1-249-416-11	CARBON	820	5%	1/4W
R1971	1-249-417-11	CARBON	1K	5%	1/4W
R1972	1-249-418-11	CARBON	1.2K	5%	1/4W
R1973	1-249-420-11	CARBON	1.8K	5%	1/4W
R1974	1-247-843-11	CARBON	3.3K	5%	1/4W
R1975	1-249-427-11	CARBON	6.8K	5%	1/4W
R1976	1-249-432-11	CARBON	18K	5%	1/4W
		<SWITCH>			
S1972	1-572-198-11	SWITCH, KEYBOARD			
S1973	1-572-198-11	SWITCH, KEYBOARD			
S1974	1-572-198-11	SWITCH, KEYBOARD			
S1975	1-572-198-11	SWITCH, KEYBOARD			
S1976	1-572-198-11	SWITCH, KEYBOARD			
S1977	1-572-198-11	SWITCH, KEYBOARD			
S1978	1-572-198-11	SWITCH, KEYBOARD			
S1979	1-572-198-11	SWITCH, KEYBOARD			

J

REF NO.	PART NO.	DESCRIPTION			REMARK
**********					
*	A-1395-041-A	J BOARD COMPLETE			
		**********			
	3-350-679-01	WASHER, FIBER			
		<CAPACITOR>			
C8300	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8301	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8302	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8303	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8304	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8305	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8306	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8307	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8308	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8309	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8310	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8311	1-164-346-11	CERAMIC CHIP	1UF		16V
C8312	1-164-346-11	CERAMIC CHIP	1UF		16V
C8313	1-164-346-11	CERAMIC CHIP	1UF		16V
C8314	1-164-346-11	CERAMIC CHIP	1UF		16V
C8315	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8316	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C8317	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8318	1-164-346-11	CERAMIC CHIP	1UF		16V
C8319	1-164-346-11	CERAMIC CHIP	1UF		16V
C8320	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8321	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8322	1-164-346-11	CERAMIC CHIP	1UF		16V
C8323	1-164-346-11	CERAMIC CHIP	1UF		16V
C8324	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8325	1-126-935-11	ELECT	470UF	20.00%	16V
C8326	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8327	1-164-346-11	CERAMIC CHIP	1UF		16V
C8328	1-164-346-11	CERAMIC CHIP	1UF		16V
C8329	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C8330	1-164-346-11	CERAMIC CHIP	1UF		16V
C8331	1-164-346-11	CERAMIC CHIP	1UF		16V
C8332	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C8333	1-115-340-11	CERAMIC CHIP	0.22UF	10.00%	25V
C8334	1-126-947-11	ELECT	47UF	20.00%	16V
C8335	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8336	1-126-947-11	ELECT	47UF	20.00%	16V
C8337	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8338	1-164-346-11	CERAMIC CHIP	1UF		16V
C8339	1-164-346-11	CERAMIC CHIP	1UF		16V
C8340	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8341	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8342	1-126-964-11	ELECT	10UF	20.00%	50V
C8343	1-126-947-11	ELECT	47UF	20.00%	16V
C8344	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8346	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8347	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8348	1-126-968-11	ELECT	100UF	20.00%	16V
C8349	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8352	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8353	1-115-340-11	CERAMIC CHIP	0.22UF	10.00%	25V
C8354	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8355	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8356	1-164-346-11	CERAMIC CHIP	1UF		16V
C8357	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8358	1-164-346-11	CERAMIC CHIP	1UF		16V
C8359	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C8360	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8361	1-126-961-11	ELECT	2.2UF	20.00%	50V
C8362	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8363	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8364	1-126-947-11	ELECT	47UF	20.00%	16V
C8365	1-126-947-11	ELECT	47UF	20.00%	16V
C8366	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8367	1-126-947-11	ELECT	47UF	20.00%	16V
C8368	1-126-947-11	ELECT	47UF	20.00%	16V
C8369	1-126-947-11	ELECT	47UF	20.00%	16V
C8370	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8371	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8372	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8373	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C8374	1-164-346-11	CERAMIC CHIP	1UF		16V
C8375	1-126-964-11	ELECT	10UF	20.00%	50V
C8376	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8381	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8382	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8386	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8390	1-126-963-11	ELECT	4.7UF	20.00%	50V
C8391	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8392	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8393	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8396	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8399	1-126-961-11	ELECT	2.2UF	20.00%	50V
C8401	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8402	1-164-346-11	CERAMIC CHIP	1UF		16V
C8403	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C8406	1-126-947-11	ELECT	47UF	20.00%	16V
C8407	1-126-947-11	ELECT	47UF	20.00%	16V
C8408	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8410	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8411	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8412	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8413	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8414	1-126-947-11	ELECT	47UF	20.00%	16V
C8415	1-164-346-11	CERAMIC CHIP	1UF		16V
C8416	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8417	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C8418	1-126-964-11	ELECT	10UF	20.00%	50V
C8419	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8424	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8425	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C8430	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8437	1-126-963-11	ELECT	4.7UF	20.00%	50V
C8438	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8439	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8440	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8441	1-164-346-11	CERAMIC CHIP	1UF		16V
C8442	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8443	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8444	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C8445	1-164-346-11	CERAMIC CHIP	1UF		16V
C8446	1-126-947-11	ELECT	47UF	20.00%	16V
C8447	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V

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REF NO.	PART NO.	DESCRIPTION			REMARK
C8448	1-164-690-91	CERAMIC CHIP	0.0022UF	5.00%	50V
C8450	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C8451	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C8452	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8453	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8454	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8455	1-126-947-11	ELECT	47UF	20.00%	16V
C8456	1-126-947-11	ELECT	47UF	20.00%	16V
C8457	1-126-947-11	ELECT	47UF	20.00%	16V
C8459	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8464	1-126-947-11	ELECT	47UF	20.00%	16V
C8465	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8466	1-247-807-31	CARBON	100	5%	1/4W
C8468	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8469	1-247-807-31	CARBON	100	5%	1/4W
C8471	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C8474	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
		<CONNECTOR>			
CN8301 *	1-564-524-11	PLUG, CONNECTOR 9P			
CN8302	1-695-915-11	TAB (CONTACT)			
CN8304	1-793-498-11	CONNECTOR, BOARD TO BOARD 50P			
		<DIODE>			
D8101	8-719-404-50	MA111-TX			
D8102	1-216-295-91	SHORT	0		
D8301	8-719-158-35	RD9.1S-B			
D8302	8-719-158-35	RD9.1S-B			
D8303	8-719-158-35	RD9.1S-B			
D8304	8-719-158-35	RD9.1S-B			
D8305	8-719-158-35	RD9.1S-B			
D8306	8-719-158-35	RD9.1S-B			
D8307	8-719-158-35	RD9.1S-B			
D8308	8-719-158-35	RD9.1S-B			
D8309	8-719-158-35	RD9.1S-B			
D8310	8-719-158-35	RD9.1S-B			
D8311	8-719-158-35	RD9.1S-B			
D8312	8-719-158-35	RD9.1S-B			
D8313	8-719-158-35	RD9.1S-B			
D8314	8-719-158-35	RD9.1S-B			
D8315	8-719-067-40	STZ6.8N-T146			
D8316	8-719-067-40	STZ6.8N-T146			
D8317	8-719-067-40	STZ6.8N-T146			
D8318	8-719-158-35	RD9.1S-B			
D8319	8-719-158-35	RD9.1S-B			
D8320	8-719-158-35	RD9.1S-B			
D8321	8-719-158-35	RD9.1S-B			
D8322	8-719-158-35	RD9.1S-B			
D8323	8-719-158-35	RD9.1S-B			
D8324	8-719-158-35	RD9.1S-B			
D8325	8-719-158-35	RD9.1S-B			
D8331	8-719-041-97	MA113-(TX)			
		<FERRITE BEAD>			
FB8101	1-414-598-11	FERRITE	0UH		

REF NO.	PART NO.	DESCRIPTION	REMARK
		<FILTER>	
FL8301	1-236-071-11	ENCAPSULATED COMPONENT	
FL8303	1-236-071-11	ENCAPSULATED COMPONENT	
FL8304	1-236-071-11	ENCAPSULATED COMPONENT	
FL8305	1-236-071-11	ENCAPSULATED COMPONENT	
FL8307	1-236-071-11	ENCAPSULATED COMPONENT	
FL8308	1-236-071-11	ENCAPSULATED COMPONENT	
FL8309	1-236-071-11	ENCAPSULATED COMPONENT	
FL8311	1-236-071-11	ENCAPSULATED COMPONENT	
FL8312	1-236-071-11	ENCAPSULATED COMPONENT	
FL8313	1-236-071-11	ENCAPSULATED COMPONENT	
FL8314	1-233-877-11	FILTER, LOW PASS	
FL8315	1-233-504-21	FILTER, LOW PASS	
FL8316	1-233-504-21	FILTER, LOW PASS	
		<IC>	
IC8302	8-752-080-04	CXA2069Q	
IC8304	8-759-576-72	LF50CDT-TR	
IC8305	8-759-576-74	LF90CDT-TR	
IC8306	8-752-094-47	CXA2123AQ-T6	
IC8308	8-752-094-47	CXA2123AQ-T6	
IC8309	8-759-337-26	MM1115XFBE	
IC8310	8-759-572-04	TDA9178T/N1.118	
IC8311	8-759-485-79	TC7SET08FU(TE85L	
IC8312	8-759-485-79	TC7SET08FU(TE85L	
IC8314	8-742-175-00	HYB IC SBX3005-11	
		<JACK>	
J8106	1-793-787-11	JACK BLOCK, PIN 1P	
J8301	1-774-748-11	TERMINAL BLOCK, S	
J8302	1-774-746-11	JACK BLOCK, PIN	
J8303	1-774-746-11	JACK BLOCK, PIN	
J8304	1-774-746-11	JACK BLOCK, PIN	
J8305	1-695-444-11	PIN JACK BLOCK 3P	
J8307	1-565-838-11	JACK BLOCK, PIN 2P	
		<CHIP CONDUCTOR>	
JR8301	1-216-295-91	SHORT 0	
JR8302	1-216-295-91	SHORT 0	
JR8303	1-216-295-91	SHORT 0	
JR8304	1-216-295-91	SHORT 0	
		<TRANSISTOR>	
Q8301	8-729-026-49	2SA1037AK-T146-R	
Q8302	8-729-230-49	2SC2712-YG	
Q8303	8-729-230-49	2SC2712-YG	
Q8304	8-729-230-49	2SC2712-YG	
Q8305	8-729-026-49	2SA1037AK-T146-R	
Q8306	8-729-230-49	2SC2712-YG	
Q8307	8-729-230-49	2SC2712-YG	
Q8308	8-729-230-49	2SC2712-YG	
Q8309	8-729-230-49	2SC2712-YG	
Q8310	8-729-230-49	2SC2712-YG	
Q8312	8-729-230-49	2SC2712-YG	
Q8313	8-729-230-49	2SC2712-YG	
Q8319	8-729-026-49	2SA1037AK-T146-R	

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REF NO.	PART NO.	DESCRIPTION	REMARK
Q8320	8-729-026-49	2SA1037AK-T146-R	
Q8321	8-729-026-49	2SA1037AK-T146-R	
Q8322	8-729-026-49	2SA1037AK-T146-R	
Q8323	8-729-026-49	2SA1037AK-T146-R	
Q8324	8-729-026-49	2SA1037AK-T146-R	
Q8326	8-729-230-49	2SC2712-YG	
Q8327	1-801-806-11	TR DTC144EKA	
Q8328	1-801-806-11	TR DTC144EKA	
Q8329	8-729-230-49	2SC2712-YG	
Q8330	8-729-230-49	2SC2712-YG	
Q8331	8-729-230-49	2SC2712-YG	
Q8332	8-729-230-49	2SC2712-YG	
Q8333	8-729-230-49	2SC2712-YG	
Q8334	8-729-230-49	2SC2712-YG	
Q8335	8-729-230-49	2SC2712-YG	
Q8336	8-729-230-49	2SC2712-YG	
Q8342	8-729-230-49	2SC2712-YG	
Q8343	8-729-026-49	2SA1037AK-T146-R	
Q8345	8-729-230-49	2SC2712-YG	
Q8346	8-729-026-49	2SA1037AK-T146-R	
Q8347	8-729-230-49	2SC2712-YG	
Q8348	8-729-026-49	2SA1037AK-T146-R	
Q8349	8-729-230-49	2SC2712-YG	
Q8350	8-729-026-49	2SA1037AK-T146-R	
Q8351	8-729-230-49	2SC2712-YG	
Q8352	8-729-026-49	2SA1037AK-T146-R	
Q8353	8-729-026-49	2SA1037AK-T146-R	
Q8354	8-729-026-49	2SA1037AK-T146-R	
Q8355	8-729-026-49	2SA1037AK-T146-R	
Q8361	8-729-230-49	2SC2712-YG	
Q8362	8-729-230-49	2SC2712-YG	
Q8363	8-729-230-49	2SC2712-YG	
Q8364	8-729-026-49	2SA1037AK-T146-R	
Q8464	8-729-230-49	2SC2712-YG	
Q8465	8-729-230-49	2SC2712-YG	
Q8466	8-729-230-49	2SC2712-YG	
Q8512	8-729-026-49	2SA1037AK-T146-R	

<RESISTOR>

REF NO.	PART NO.	DESCRIPTION			REMARK
R8101	1-216-033-00	RES-CHIP	220	5%	1/10W
R8208	1-216-295-91	SHORT	0		
R8209	1-216-295-91	SHORT	0		
R8301	1-216-041-00	RES-CHIP	470	5%	1/10W
R8302	1-216-041-00	RES-CHIP	470	5%	1/10W
R8303	1-216-021-00	RES-CHIP	68	5%	1/10W
R8304	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R8305	1-216-113-00	RES-CHIP	470K	5%	1/10W
R8306	1-216-022-00	RES-CHIP	75	5%	1/10W
R8307	1-216-022-00	RES-CHIP	75	5%	1/10W
R8308	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8309	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8310	1-216-022-00	RES-CHIP	75	5%	1/10W
R8311	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8312	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8313	1-216-022-00	RES-CHIP	75	5%	1/10W
R8314	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8315	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8316	1-216-113-00	RES-CHIP	470K	5%	1/10W
R8317	1-216-022-00	RES-CHIP	75	5%	1/10W
R8318	1-216-022-00	RES-CHIP	75	5%	1/10W
R8319	1-216-022-00	RES-CHIP	75	5%	1/10W
R8320	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8321	1-216-105-91	RES-CHIP	220K	5%	1/10W
R8322	1-216-022-00	RES-CHIP	75	5%	1/10W
R8323	1-216-295-91	SHORT	0		
R8324	1-216-295-91	SHORT	0		
R8325	1-216-295-91	SHORT	0		
R8326	1-216-113-00	RES-CHIP	470K	5%	1/10W
R8327	1-216-295-91	SHORT	0		
R8328	1-216-113-00	RES-CHIP	470K	5%	1/10W
R8329	1-216-113-00	RES-CHIP	470K	5%	1/10W
R8330	1-216-022-00	RES-CHIP	75	5%	1/10W
R8331	1-216-295-91	SHORT	0		
R8332	1-216-295-91	SHORT	0		
R8333	1-216-295-91	SHORT	0		
R8334	1-216-295-91	SHORT	0		
R8335	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8336	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8337	1-216-022-00	RES-CHIP	75	5%	1/10W
R8338	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8339	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8340	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8341	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8342	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8343	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8344	1-216-022-00	RES-CHIP	75	5%	1/10W
R8345	1-216-033-00	RES-CHIP	220	5%	1/10W
R8346	1-216-031-00	RES-CHIP	180	5%	1/10W
R8347	1-216-025-11	RES-CHIP	100	5%	1/10W
R8348	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R8349	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8350	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8351	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8352	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R8353	1-216-017-91	RES-CHIP	47	5%	1/10W
R8354	1-216-017-91	RES-CHIP	47	5%	1/10W
R8355	1-216-295-91	SHORT	0		
R8356	1-216-295-91	SHORT	0		
R8357	1-216-017-91	RES-CHIP	47	5%	1/10W
R8358	1-216-017-91	RES-CHIP	47	5%	1/10W
R8361	1-216-017-91	RES-CHIP	47	5%	1/10W
R8362	1-216-017-91	RES-CHIP	47	5%	1/10W
R8363	1-216-642-11	METAL CHIP	430	0.5%	1/10W
R8364	1-216-041-00	RES-CHIP	470	5%	1/10W
R8365	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8366	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8367	1-216-041-00	RES-CHIP	470	5%	1/10W
R8369	1-216-041-00	RES-CHIP	470	5%	1/10W
R8370	1-216-025-11	RES-CHIP	100	5%	1/10W
R8372	1-216-295-91	SHORT	0		
R8373	1-216-295-91	SHORT	0		
R8374	1-216-039-00	RES-CHIP	390	5%	1/10W
R8375	1-216-041-00	RES-CHIP	470	5%	1/10W
R8376	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8377	1-216-025-11	RES-CHIP	100	5%	1/10W
R8378	1-216-033-00	RES-CHIP	220	5%	1/10W
R8379	1-216-033-00	RES-CHIP	220	5%	1/10W
R8380	1-216-025-11	RES-CHIP	100	5%	1/10W
R8381	1-216-025-11	RES-CHIP	100	5%	1/10W
R8382	1-216-033-00	RES-CHIP	220	5%	1/10W
R8383	1-216-033-00	RES-CHIP	220	5%	1/10W
R8384	1-216-025-11	RES-CHIP	100	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R8385	1-216-025-11	RES-CHIP	100	5%	1/10W
R8386	1-216-025-11	RES-CHIP	100	5%	1/10W
R8388	1-216-031-00	RES-CHIP	180	5%	1/10W
R8389	1-216-033-00	RES-CHIP	220	5%	1/10W
R8390	1-216-642-11	METAL CHIP	430	0.5%	1/10W
R8391	1-216-041-00	RES-CHIP	470	5%	1/10W
R8393	1-216-037-00	RES-CHIP	330	5%	1/10W
R8394	1-216-041-00	RES-CHIP	470	5%	1/10W
R8395	1-216-033-00	RES-CHIP	220	5%	1/10W
R8396	1-216-033-00	RES-CHIP	220	5%	1/10W
R8398	1-216-025-11	RES-CHIP	100	5%	1/10W
R8399	1-216-025-11	RES-CHIP	100	5%	1/10W
R8400	1-216-025-11	RES-CHIP	100	5%	1/10W
R8401	1-216-081-00	RES-CHIP	22K	5%	1/10W
R8404	1-216-033-00	RES-CHIP	220	5%	1/10W
R8405	1-216-033-00	RES-CHIP	220	5%	1/10W
R8406	1-216-033-00	RES-CHIP	220	5%	1/10W
R8407	1-216-033-00	RES-CHIP	220	5%	1/10W
R8408	1-216-033-00	RES-CHIP	220	5%	1/10W
R8409	1-216-295-91	SHORT	0		
R8410	1-216-295-91	SHORT	0		
R8411	1-216-083-00	RES-CHIP	27K	5%	1/10W
R8412	1-216-073-91	RES-CHIP	10K	5%	1/10W
R8413	1-216-041-00	RES-CHIP	470	5%	1/10W
R8414	1-208-796-11	METAL CHIP	3.9K	0.5%	1/10W
R8415	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8417	1-216-025-11	RES-CHIP	100	5%	1/10W
R8418	1-216-025-11	RES-CHIP	100	5%	1/10W
R8419	1-216-017-91	RES-CHIP	47	5%	1/10W
R8420	1-216-017-91	RES-CHIP	47	5%	1/10W
R8421	1-216-295-91	SHORT	0		
R8422	1-216-295-91	SHORT	0		
R8424	1-216-083-00	RES-CHIP	27K	5%	1/10W
R8425	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8426	1-208-796-11	METAL CHIP	3.9K	0.5%	1/10W
R8428	1-216-295-91	SHORT	0		
R8429	1-216-295-91	SHORT	0		
R8430	1-216-295-91	SHORT	0		
R8431	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8432	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8433	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8434	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8435	1-216-295-91	SHORT	0		
R8436	1-216-017-91	RES-CHIP	47	5%	1/10W
R8440	1-216-295-91	SHORT	0		
R8441	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8442	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8443	1-216-025-11	RES-CHIP	100	5%	1/10W
R8444	1-216-025-11	RES-CHIP	100	5%	1/10W
R8445	1-216-017-91	RES-CHIP	47	5%	1/10W
R8446	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8447	1-216-025-11	RES-CHIP	100	5%	1/10W
R8448	1-216-025-11	RES-CHIP	100	5%	1/10W
R8449	1-216-025-11	RES-CHIP	100	5%	1/10W
R8450	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8451	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8452	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8453	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8454	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8455	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8456	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8457	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8458	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8459	1-216-025-11	RES-CHIP	100	5%	1/10W
R8460	1-216-025-11	RES-CHIP	100	5%	1/10W
R8461	1-216-025-11	RES-CHIP	100	5%	1/10W
R8462	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8463	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8464	1-216-025-11	RES-CHIP	100	5%	1/10W
R8465	1-216-025-11	RES-CHIP	100	5%	1/10W
R8466	1-216-025-11	RES-CHIP	100	5%	1/10W
R8467	1-216-041-00	RES-CHIP	470	5%	1/10W
R8468	1-216-041-00	RES-CHIP	470	5%	1/10W
R8469	1-216-041-00	RES-CHIP	470	5%	1/10W
R8470	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R8471	1-216-025-11	RES-CHIP	100	5%	1/10W
R8472	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8473	1-216-025-11	RES-CHIP	100	5%	1/10W
R8474	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8475	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8478	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8479	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8480	1-216-073-91	RES-CHIP	10K	5%	1/10W
R8481	1-216-095-00	RES-CHIP	82K	5%	1/10W
R8482	1-216-089-91	RES-CHIP	47K	5%	1/10W
R8484	1-216-045-00	RES-CHIP	680	5%	1/10W
R8485	1-216-037-00	RES-CHIP	330	5%	1/10W
R8486	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8487	1-216-045-00	RES-CHIP	680	5%	1/10W
R8488	1-216-041-00	RES-CHIP	470	5%	1/10W
R8489	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8490	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8491	1-216-025-11	RES-CHIP	100	5%	1/10W
R8493	1-216-081-00	RES-CHIP	22K	5%	1/10W
R8495	1-216-081-00	RES-CHIP	22K	5%	1/10W
R8496	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8497	1-216-025-11	RES-CHIP	100	5%	1/10W
R8499	1-216-081-00	RES-CHIP	22K	5%	1/10W
R8501	1-216-081-00	RES-CHIP	22K	5%	1/10W
R8502	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8503	1-216-097-11	RES-CHIP	100K	5%	1/10W
R8504	1-216-295-91	SHORT	0		
R8507	1-216-025-11	RES-CHIP	100	5%	1/10W
R8508	1-216-025-11	RES-CHIP	100	5%	1/10W
R8510	1-216-041-00	RES-CHIP	470	5%	1/10W
R8511	1-216-041-00	RES-CHIP	470	5%	1/10W
R8512	1-216-017-91	RES-CHIP	47	5%	1/10W
R8516	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8522	1-216-041-00	RES-CHIP	470	5%	1/10W
R8524	1-216-041-00	RES-CHIP	470	5%	1/10W
R8525	1-216-033-00	RES-CHIP	220	5%	1/10W
R8528	1-216-025-11	RES-CHIP	100	5%	1/10W
R8530	1-216-041-00	RES-CHIP	470	5%	1/10W
R8532	1-216-041-00	RES-CHIP	470	5%	1/10W
R8533	1-216-041-00	RES-CHIP	470	5%	1/10W
R8536	1-216-025-11	RES-CHIP	100	5%	1/10W
R8538	1-216-041-00	RES-CHIP	470	5%	1/10W
R8540	1-216-041-00	RES-CHIP	470	5%	1/10W
R8541	1-216-039-00	RES-CHIP	390	5%	1/10W
R8544	1-216-041-00	RES-CHIP	470	5%	1/10W
R8547	1-216-295-91	SHORT	0		

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R8548	1-216-033-00	RES-CHIP	220	5%	1/10W
R8551	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8556	1-216-025-11	RES-CHIP	100	5%	1/10W
R8557	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8558	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R8560	1-216-025-11	RES-CHIP	100	5%	1/10W
R8561	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8562	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R8564	1-216-025-11	RES-CHIP	100	5%	1/10W
R8565	1-216-049-11	RES-CHIP	1K	5%	1/10W
R8566	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R8567	1-216-017-91	RES-CHIP	47	5%	1/10W
R8569	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R8570	1-216-017-91	RES-CHIP	47	5%	1/10W
R8572	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R8573	1-216-017-91	RES-CHIP	47	5%	1/10W
R8575	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R8576	1-216-013-00	RES-CHIP	33	5%	1/10W
R8577	1-216-295-91	SHORT	0		
R8578	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R8579	1-216-295-91	SHORT	0		
R8582	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R8583	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R8584	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R8585	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R8586	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R8587	1-216-295-91	SHORT	0		
R8588	1-216-041-00	RES-CHIP	470	5%	1/10W
R8589	1-216-041-00	RES-CHIP	470	5%	1/10W
R8590	1-216-041-00	RES-CHIP	470	5%	1/10W
R8592	1-216-295-91	SHORT	0		
R8594	1-216-295-91	SHORT	0		
R8595	1-216-041-00	RES-CHIP	470	5%	1/10W
R8596	1-216-041-00	RES-CHIP	470	5%	1/10W
R8597	1-216-041-00	RES-CHIP	470	5%	1/10W
		<CRYSTAL>			
X8301	1-781-612-11	VIBRATOR, CRYSTAL			
X8302	1-781-612-11	VIBRATOR, CRYSTAL			

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	* A-1391-163-A	SP BOARD MOUNTED			
		**********			
		<CAPACITOR>			
C3251	1-136-177-00	FILM	1UF	5.00%	50V
C3252	1-126-411-21	ELECT	27UF	20.00%	50V
		<CONNECTOR>			
CN3251	1-564-506-11	PLUG, CONNECTOR 3P			
CN3253	1-564-507-11	PLUG, CONNECTOR 4P			

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REF NO.	PART NO.	DESCRIPTION			REMARK
	* A-1342-626-A	V BOARD MOUNTED			
		(KV-ES38M31/ES38M61/ES38M91)			
		**********			
		<CAPACITOR>			
C1803	1-104-665-11	ELECT	100UF	20.00%	16V
C1804	1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V
C1805	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1806	1-163-105-00	CERAMIC CHIP	33PF	5.00%	50V
C1807	1-163-105-00	CERAMIC CHIP	33PF	5.00%	50V
C1808	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1809	1-104-665-11	ELECT	100UF	20.00%	16V
C1810	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C1811	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1812	1-104-665-11	ELECT	100UF	20.00%	16V
C1813	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1815	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C1819	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1821	1-163-001-11	CERAMIC CHIP	220PF	10.00%	50V
C1822	1-126-934-11	ELECT	220UF	20.00%	10V
C1824	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1826	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1827	1-126-934-11	ELECT	220UF	20.00%	10V
C1828	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1829	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
		<CONNECTOR>			
CN1801	1-793-496-11	CONNECTOR, BOARD TO BOARD 20P			
		<DIODE>			
D1802	8-719-404-50	MA111-TX			
D1803	8-719-404-50	MA111-TX			
D1809	8-719-404-50	MA111-TX			
D1810	8-719-404-50	MA111-TX			
		<FERRITE BEAD>			
FB1801	1-410-397-21	FERRITE	1.1UH		
FB1802	1-410-397-21	FERRITE	1.1UH		
FB1803	1-410-397-21	FERRITE	1.1UH		
FB1804	1-410-397-21	FERRITE	1.1UH		
FB1805	1-410-397-21	FERRITE	1.1UH		
		<IC>			
IC1801	8-759-652-13	SDA5254-2B006			
IC1802	8-759-239-14	TA78L05S			
IC1803	8-759-042-02	S-80743AL-A7-S			
		<COIL>			
L1801	1-408-602-31	INDUCTOR	8.2UH		
		<TRANSISTOR>			
Q1802	8-729-230-50	2SC2712-YG			
Q1803	8-729-230-49	2SC2712-YG			
Q1804	8-729-026-49	2SA1037AK-T146-R			
Q1805	8-729-026-49	2SA1037AK-T146-R			
Q1806	8-729-026-49	2SA1037AK-T146-R			

VM V

REF NO.	PART NO.	DESCRIPTION			
		<RESISTOR>			
R1804	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R1805	1-216-025-11	RES-CHIP	100	5%	1/10W
R1806	1-216-025-11	RES-CHIP	100	5%	1/10W
R1807	1-208-816-11	METAL CHIP	27K	0.5%	1/10W
R1808	1-216-025-11	RES-CHIP	100	5%	1/10W
R1809	1-208-758-11	METAL CHIP	100	0.5%	1/10W
R1811	1-208-758-11	METAL CHIP	100	0.5%	1/10W
R1812	1-216-295-91	SHORT	0		
R1813	1-208-758-11	METAL CHIP	100	0.5%	1/10W
R1814	1-216-295-91	SHORT	0		
R1815	1-216-295-91	SHORT	0		
R1816	1-216-295-91	SHORT	0		
R1820	1-216-121-11	RES-CHIP	1M	5%	1/10W
R1821	1-216-041-00	RES-CHIP	470	5%	1/10W
R1822	1-216-025-11	RES-CHIP	100	5%	1/10W
R1823	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1824	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1825	1-216-041-00	RES-CHIP	470	5%	1/10W
R1826	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1827	1-216-037-00	RES-CHIP	330	5%	1/10W
R1829	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R1830	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R1831	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1832	1-215-859-00	METAL OXIDE	22	5%	1W
R1833	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1834	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1835	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1836	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1837	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1838	1-216-025-11	RES-CHIP	100	5%	1/10W
R1839	1-216-025-11	RES-CHIP	100	5%	1/10W
R1840	1-216-025-11	RES-CHIP	100	5%	1/10W
R1841	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		<CRYSTAL>			
X1801	1-781-685-21	VIBRATOR, CRYSTAL			

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*	A-1342-625-A	VM BOARD MOUNTED			
		**********			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C5401	1-126-935-11	ELECT	470UF	20.00%	16V
C5402	1-137-194-81	FILM	0.47UF	5.00%	50V
C5403	1-126-935-11	ELECT	470UF	20.00%	6.3V
C5405	1-126-933-11	ELECT	100UF	20.00%	16V
C5406	1-126-935-11	ELECT	470UF	20.00%	6.3V
C5407	1-107-364-11	MYLAR	0.01UF	10.00%	200V
C5408	1-107-364-11	MYLAR	0.01UF	10.00%	200V
C5409	1-107-649-11	ELECT	2.2UF	20.00%	250V
C5410	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C5411	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C5412	1-126-935-11	ELECT	470UF	20.00%	16V
C5413	1-107-648-91	ELECT	100UF	20.00%	160V
C5415	1-104-999-11	MYLAR	0.1UF	10.00%	200V
C5418	1-107-638-11	ELECT	33UF	20.00%	160V
		<CONNECTOR>			
CN5401	* 1-770-723-11	CONNECTOR, BOARD TO BOARD 8P			
CN5402	1-764-334-11	PLUG, CONNECTOR 11P			
		<DIODE>			
D5400	8-719-911-19	1SS119-25			
D5401	8-719-510-02	D1NS4			
D5402	8-719-911-19	1SS119-25			
D5403	8-719-911-19	1SS119-25			
D5404	8-719-911-19	1SS119-25			
D5405	8-719-110-56	RD22ES-B1			
D5406	8-719-110-56	RD22ES-B1			
		<COIL>			
L5400	1-412-525-31	INDUCTOR	10UH		
		<TRANSISTOR>			
Q5400	8-729-119-78	2SC2785-HFE			
Q5401	8-729-119-78	2SC2785-HFE			
Q5402	8-729-119-78	2SC2785-HFE			
Q5403	8-729-119-78	2SC2785-HFE			
Q5404	8-729-119-76	2SA1175-HFE			
Q5405	8-729-119-76	2SA1175-HFE			
Q5406	8-729-045-05	2SA2005			
Q5407	8-729-045-04	2SC5511			
		<RESISTOR>			
R5401	1-249-425-11	CARBON	4.7K	5%	1/4W
R5402	1-249-415-11	CARBON	680	5%	1/4W
R5403	1-247-739-11	CARBON	100	5%	1/2W
R5404	1-249-418-11	CARBON	1.2K	5%	1/4W
R5406	1-249-425-11	CARBON	4.7K	5%	1/4W
R5407	1-249-399-11	CARBON	33	5%	1/4W
R5408	1-247-807-31	CARBON	100	5%	1/4W
R5409	1-249-409-11	CARBON	220	5%	1/4W
R5410	1-249-401-11	CARBON	47	5%	1/4W
R5411	1-249-401-11	CARBON	47	5%	1/4W
R5412	1-249-429-11	CARBON	10K	5%	1/4W
R5413	1-249-414-11	CARBON	560	5%	1/4W
R5414	1-249-432-11	CARBON	18K	5%	1/4W
R5415	1-247-739-11	CARBON	100	5%	1/2W
R5416	1-249-385-11	CARBON	2.2	5%	1/4W
R5417	1-249-432-11	CARBON	18K	5%	1/4W
R5418	1-249-414-11	CARBON	560	5%	1/4W
R5419	1-249-421-11	CARBON	2.2K	5%	1/4W
R5420	1-249-421-11	CARBON	2.2K	5%	1/4W
R5421	1-249-385-11	CARBON	2.2	5%	1/4W
R5422	1-249-405-11	CARBON	100	5%	1/4W
R5423	1-215-915-11	METAL OXIDE	470	5%	3W
R5424	1-249-395-11	CARBON	15	5%	1/4W
R5425	1-249-401-11	CARBON	47	5%	1/4W
R5427	1-249-395-11	CARBON	15	5%	1/4W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF NO.	PART NO.	DESCRIPTION	REMARK
**********			
		ACCESSORIES AND PACKING MATERIALS	
		**********	
	1-769-175-21	CABLE, ANTENNA (WITH FILTER)	
	1-569-008-21	ADAPTOR, CONVERSION 2P (KV-ES38M91 only)	
	3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)	
*	4-081-299-01	BAG, PROTECTION	
	4-084-490-01	INDIVIDUAL CARTON	
*	4-084-491-01	TRAY	
*	4-084-494-01	CUSHION (UPPER) (EXCEPT KV-ES38M61)	
*	4-084-495-01	CUSHION (LOWER) (EXCEPT KV-ES38M61)	
*	4-396-077-01	JOINT	
	4-079-895-51	MANUAL, INSTRUCTION (KV-ES38M31/M91)	
	4-079-895-41	MANUAL, INSTRUCTION (KV-ES38M61)	
	4-079-895-21	MANUAL, INSTRUCTION (KV-ES38M90)	
	4-079-895-31	MANUAL, INSTRUCTION (KV-ES38M91)	
	4-392-003-01	BAND, HOLD	
	4-392-004-11	CLIP	
*	4-055-673-01	SHEET, PROTECTION	
**********			
		REMOTE COMMANDER	
		**********	
	1-418-566-11	REMOTE COMMANDER (RM-916)	
	4-074-721-01	BATTERY COVER REMOTE COMMANDER	

Sony Corporation
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Visual Products General Area

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